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ABSTRACT

Combining instruction in critical thinking and expository writing with the study of classic texts, this textbook was developed at Baker University (Kansas) and is designed for use in a two-semester college course that fosters careful thinking and good reasoning in students. The textbook emphasizes the pedagogical principle that critical thinking and writing can best be understood, at least for beginners, as formal processes with clear strategies for success, and that some knowledge of formal logic is required to understand better the patterns of good reasoning. Chapters in the book are: (1) Introduction: Why Critical Thinking?; (2) What Is Critical Thinking?; (3) Understanding What You Read; (4) Evaluating Arguments: Deductive Reasoning and Logical Form; (5) Inductive Logic; (6) Informal Fallacies; and (7) Reasoning and Writing. Appendixes presents a glossary of grammar terms and a sample paper: additional appendixes discuss standards for written prose; correcting faulty grammar; documentation techniques; critical thinking and literary criticism; critical thinking and values; and predicate logic. An attachment describes the initial project from which the textbook was developed and presents a course description and list of readings. (RS)

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ED 361 708

CS214002

REASONING AND WRITING:

AN INTRODUCTION
TO
CRITICAL THINKING

BAKER
UNIVERSITY

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Chapter One
Introduction

Why Critical Thinking?

> No one can be a great thinker who does not recognize that as a great thinker it is his first duty to follow his intellect to whatever conclusions it may lead. Truth gains more even by the error of one who, with due study and preparation, thinks for himself than by the opinions of those who only hold them because they do not suffer themselves to think.
>
> J. S. Mill, *On Liberty*

1.1 Introduction

This is a book about reasoning and writing. It is based on the assumption that through the course of our college education we should come to understand and appreciate the nature of clear thinking and reasoned argument. Without such an understanding, it is impossible to evaluate honestly the worth of the alternative claims, human values, and ways of life that are often presented in various courses and texts. Evaluating alternative positions means understanding the claims and weighing the strength of the reasons given in their support. The ability to conduct such an evaluation is part of what it means to be a critical thinker.

To this end, we need to understand the nature of careful thinking and good reasoning. Just as importantly, however, we must also develop a habit of mind that inclines us to be critical in any area of life where deliberation, choice, and action are appropriate. As critical persons, we should be inclined to discriminate between beliefs and values for which there are good reasons and those for which the reasons are not so strong. We should accept the former while remaining skeptical of the latter. In other words, to use a metaphor common in education, students who are critical thinkers become "filters" who selectively allow only the more carefully considered beliefs and values to guide their lives. Critical thinkers refuse to be "sponges" who indiscriminately soak up whatever belief, value, or bit of information comes their way.

Given such educational goals, certain important questions arise: What skills, dispositions, and knowledge do critical thinkers need? What forces prevent humans from developing their critical faculties? How are critical thinking and the reading of primary texts related? What is the relationship between learning to think critically and becoming a good writer? These questions and others will be explored in the following chapters.

1.2 Critical Thinking and the Western Tradition

Our approach combines instruction in critical thinking and expository writing with the study of classic texts. How do these three areas of study fit together? In 1983, after the College Board had conducted an extensive study of the skills college-bound freshmen needed, board president George Hanford suggested that, beyond the skills of reading, writing, and arithmetic, it was imperative to teach "the Fourth R" (reasoning) throughout high school. Hanford stated that reading and writing were of little use if one could not evaluate critically what one read or wrote. He claimed that, for the sake of developing students' rational and critical abilities, teachers should be willing to sacrifice some course content and devote time to teaching the strategies for critical evaluation. He urged teachers to design assignments so that students were asked to use these skills.[1]

A few years after Hanford made this plea for teaching "the Fourth R," other critics of education began to lament the fact that American education was ignoring the intellectual foundations necessary for our students to understand our culture, its values, and its problems. In 1987 Allan Bloom, in his book *The Closing of the American Mind*, presented a bleak view of contemporary university education. In his view, the foundations of our culture had been destroyed through neglect, and what was called education had become a hodgepodge of requirements from disparate disciplines with no unified vision or theme. He was concerned because modern students were not required to read any of the classic texts of the Western tradition, works which contained a wealth of competing positions and arguments. Bloom maintained that if students had no knowledge of the arguments for alternative points of view, they were no longer in a position to pass enlightened judgment on the wide variety of competing positions, values, and institutions presented in our contemporary, pluralistic society.

Bloom's book became a surprise best-seller. However, much of the university community was predictably not very enthusiastic. It was, after all, the members of that community who were being criticized for watering down education and for not developing students' critical abilities, i.e., for "closing the American mind." When Bloom claimed that students should study specific primary texts, most reviewers seemed to think that he was proposing an elitist education.[2] These critics assumed that many of today's college students were incapable of understanding the works studied by our nation's founding fathers, who used them as guides to their own thinking when they framed the U.S. Constitution. These critics held that to require all students to study these works would be "elitist education."

Such criticism seems unduly negative. It implies an irreversible degradation of student abilities. It implies that anything that is required in a college education should be something that every student can easily master. Such a position is egalitarianism at its worst: the best-prepared students remain unchallenged while the worst-prepared develop a false sense of superiority.

The texts for this course sequence are not unchallenging. They are chosen with the assumption that all students can learn to read, understand, and evaluate texts that have been and continue to be important in our culture's continuing development. These texts include writings by Plato, Aquinas, Bacon, and Madison, to name only a few.

Another criticism of Bloom's book was that his prescribed readings from the Western tradition tended to be reductionist and ethnocentric. Many of the works were written by white males of the Western culture and hence tend to reflect the values of that culture. Nonetheless, Bloom may have missed a golden opportunity to explain why the ideas expressed in these favored works were important not only for our culture's traditions but also for the development of any educated mind. The sex and race of an author may affect the author's ideas, but whether the ideas are worthy of study has nothing to do with their source. To reject an idea because of its source is to commit a logical fallacy. What one finds in the works of thinkers like Homer, Sophocles, Plato, and Shakespeare are important and thought-provoking ideas. One also finds arguments that support the ideas and critique alternatives. Both the ideas and the arguments call for an evaluation by the reader. The critical reader soon finds that the truth of claims about important ideas is not self-evident, but is always controversial. The works invite us to analyze and evaluate claims rather than to accept them without thought. The value of studying many of the "great works" of the Western culture is that one soon finds that any idea, value, institution, scientific theory, or educational practice that is proposed as a candidate for "the truth" at the same time asks for critical scrutiny. Most of the great works of the Western tradition are unified in their rejection of dogmatism and uncritical acceptance of authoritarian ideas. The Western tradition is one that endorses the value of critical thought and those other values necessary to engage in open discussion and honest criticism. To make a claim is at the same time to invite criticism.

If indeed this is what studying some of the important works of Western culture involves, then the study of such texts and the study of the methods of critical thinking form a marriage of naturally complementary subject matter. Critical thinking and primary texts belong together. Primary texts, as do many great works of art, both convey important ideas and invite the reader to think critically about those ideas. Often the texts are themselves examples of the process of critical thought, e.g., Plato's dialogues, scenes from great plays or novels, or philosophical essays. However, if one studies only the texts without instruction in how to evaluate critically the variety of competing claims presented in the texts, one may have the feeling of encountering a group of significant ideas but at the same time feel bewildered because there seems no way to evaluate the cogency of the competing claims. Such an educational experience can lead one to adopt an attitude of intellectual cynicism in which no position is taken seriously. On the other hand, if one receives only instruction in reasoning and logic, void of the study of significant subject matter, one's study becomes little more than intellectual gymnastics, the usefulness of which is not readily apparent, since it is void of evaluation. Hence, it seems that the study of important primary texts is a natural complement to instruction in critical reasoning and writing. As humans seeking knowledge and understanding, we must learn either to think for ourselves; if we do not, others will think for us. As we read the texts written by the "best and brightest" of our tradition, we realize that they disagree on important issues. Hence, we are forced, whether we like it or not, to make up our own minds--to think for ourselves.

1.3 The Value of Critical Thinking

The preceding argument assumes that it is good for all students to examine the debates over the important ideas and values upon which their culture is based. However, those who care little about the history of Western ideas or the intellectual debates carried on within each academic discipline may not find this argument convincing. For those students, other more pragmatic arguments may be more appealing--ones that focus on the value of critical thinking as a means to attaining more personal goals.

Students tend to enter almost any class with the question, "Why do I need to learn this?" For this course, the question might be expanded to include, "Why should I study reasoning, read these texts, and write papers? How will improving my reasoning and writing skills help me to get ahead in the world? How will it help me in other courses?"

In the first place, critical thinking is valuable because it is useful in the classroom. In courses across the curriculum, students are asked in essays and papers to discuss positions or issues "critically." For example, a professor of literature might ask you to evaluate critically Arthur Miller's portrait of the "American Dream" in *The Death of a Salesman*. Unfortunately, for many students such instructions lack meaning. Many have little idea how to analyze a text and evaluate the acceptability of its claims or arguments. Often their past education has emphasized memorization or rote learning at the expense of developing thinking skills and reasoned judgment.

Being asked to perform in ways with which we are not familiar or we do not understand is always threatening. It is all the more troublesome when we find ourselves thrown amid the mass of information and competing claims presented in the variety of college courses. How are we to decide which of many conflicting positions is most reasonable when each is presented by an expert in the discipline--especially when each position sounds as convincing as the other? Marxists extol the virtues of socialism, while libertarians fervently criticize any form of governmental interference. Some writers laud the virtues of being a traditional housewife and mother, while some feminist thinkers argue that choosing to be a traditional housewife and mother is not only unwise, but immoral. Some social scientists and psychologists argue that human behavior is determined by historical, social, and genetic forces, while ancient and modern philosophers argue for human freedom and dignity. Some authors commend the life of romantic love, while others criticize it as either a childish illusion or an exploitative phenomenon which harms both sexes. Throughout the course of our education, we find that for life's most important issues there is far more disagreement than agreement. In every discipline, the experts disagree. How is it that we can effectively decide among such competing claims?

Faced with such an educational environment, while at the same time being asked to make intelligent choices from among the competing positions, many students base their responses on personal feelings or biases. These emotional responses have been shaped by their culture or previous experience and hardly provide good reasons for accepting or rejecting a claim. For some students, unfortunately, all positions tend to sound equally convincing. These students conclude that there is no such thing as truth. They conclude that what counts as the most reasonable position is to be determined by the subjective response of each individual. For them, every claim is reduced to mere opinion. Lacking any objective or external standard by which to settle disagreements, these students ask, "Who's to say who's right and who's wrong? Isn't it all relative?"

Of course, the irony of such a relativistic position is that, if we accept it, who is to say whether that position itself is right or wrong? If the reasonableness of all claims is a function of the subjective response of the person who makes the claim, then the reasonableness of that claim is itself relative to the subjective response of each person. That claim too becomes "a mere opinion." But clearly, those who assert that the truth of any claim is "merely a matter of opinion" believe that their claim is true and not "a mere opinion." Hence, those who hold such a position contradict themselves.[3] They want all beliefs except their own to be matters of opinion.

So, if one cannot consistently hold that the reasonableness of a claim is a matter of opinion, and if personal bias is not a good reason for accepting or rejecting a claim, then one is forced to think critically about which claims to adopt and which to reject. One cannot just say, "It's all a matter of opinion." But one cannot judge the reasonableness of an argument, position, or claim without first having some understanding of the principles that make one argument, position, or claim more reasonable than another. Experience with critical thinking techniques gives humans the tools to analyze and evaluate competing claims and make an intelligent choice among them.

Besides being useful in the classroom, critical thinking is also valuable in the work-place. Many jobs require skills that are co-extensive with critical thinking. These skills include the ability to gather and analyze information, to draw reasonable conclusions from one's analysis, to engage in informed decision-making, and to communicate one's findings in clear, persuasive prose. The skills that make good critical thinkers are the same as those that make good lawyers, doctors, managers, and leaders. The study of sound reasoning and good writing is perhaps the most direct way to develop such skills.

Critical thinking skills also can be valuable in helping us make personal decisions. Contemporary psychologists who employ Rational-Emotive Psychotherapy claim that many behavioral and psychological problems are a result of poor cognitive development. One way to avoid psychological problems is to develop one's rational or critical capacities. Albert Ellis, the founder of Rational-Emotive Psychotherapy, claims that "man is a uniquely rational, as well as uniquely irrational, animal; that his emotional or psychological disturbances are largely a result of his thinking illogically or irrationally; and that he can rid himself of most of his emotional or mental unhappiness ... if he learns to maximize his rational and minimize his irrational thinking."[4] Ellis's Rational-Emotive Psychotherapy aims at showing people how their psychological difficulties largely result from distorted perceptions and illogical thinking.[5]

Young people who lack any clear notion of how to evaluate the reasonableness of a belief or value are often led by their peers to engage in illegal or problematic acts. They lack what some have called "logical self-defense."[6] The most forceful or charismatic figure of the group leads them down a path of self-destruction. Beyond depending on strong feelings or a purely emotional response, they have no idea how to evaluate the worth or the consequences of their actions. Therapists often tell of people who engage in self-destructive behavior because they are not able to think clearly about a troublesome situation and to determine the true effects of their behavior. As a result, they choose means for attaining their desired goals or ends that turn out to be ineffective or problematic. For example, imagine a teenage male who is angry at his parents for not buying him a car. In order to get even, he consciously does poor work in school. Obviously, such behavior will not achieve the desired end without severely harming the boy. He does not realize that his academic record is important and that doing poorly in school is probably not an effective means of changing his parents' minds. As the old adage goes, "He is cutting off his nose to spite his face." Psychologists like Ellis believe that if people have some training in the critical evaluation of their values, goals, and attitudes, they will be less likely to make such apparently irrational choices or to engage in problematic behaviors. Psychologists also realize, of course, that most situations are more complex than the one above and that more factors influence human behavior than one's cognitive attitudes and beliefs. e.g., personal habits, past experience, and chemistry. Nonetheless, many of us repeatedly choose harmful actions because we are not clear about the value of our goals or the real consequences of our beliefs and actions.

The benefits of developing critical thinking skills and dispositions go beyond mental health and individual success in school and the work-place. The effects of faulty reasoning are social as well as personal. We understand today that many social problems, including prejudice or social policies based on prejudice, are a function of faulty reasoning. When derogatory claims are made about classes of people or other nations, most people rarely ask, "What is the evidence for that position?" "On what size of sample has the person based his or her claim?" or "How could anyone possibly know that?" When large numbers of people in a society are unable to recognize instances of fallacious reasoning (such as hasty generalizations, false dilemmas, or false cause arguments), they often accept claims about other races, sexes, or classes of people that are logically indefensible. They become the slaves of those public figures who understand how to manipulate public sentiment through rhetorical skills or sophistic reasoning. Prejudice, bias, egocentrism, and ethnocentrism all flourish in the untrained mind, enslaving it as well as others. When these beliefs are translated into actions or social policy, they have dire social consequences.

The philosopher Aristotle gives an argument for the value of critical thinking based on the assumption that "all persons desire to know." He defines "to know" as having knowledge of the general principles and causes that govern the changes in the world around us. Aristotle demonstrates that through developing one's reasoning skills, one can go beyond mere sense experience and infer these general laws and explanatory principles.[7] Sense experience tells us that things change, but it does not tell us what principles govern the change. Only through reasoning are we able to employ our inferential powers and discover the laws that underlie physical change. So, if we desire to know the principles and causes of events, we should at the same time desire to develop those capacities that are essential for attaining this end.

While an understanding of critical thought and the reasoning process allows us to deepen our understanding of the world, it also shows the limitations of logic as a tool for gaining knowledge. Long ago, Aristotle also observed that reasoned argument cannot demonstrate the truth of all premises. Yet, all rational demonstration requires that we begin with premises and then reason to the appropriate conclusion. The problem is that, as Aristotle pointed out, if the acceptability of each premise in the argument is dependent upon the acceptance of yet prior premises, then the justification of any conclusion would involve an infinite regression of prior premises, each needing a rational justification. For example, I believe A because of B, B because of C, C because of D and so on, ad infinitum. Hence, if we are to escape such an infinite regression where the truth of each claim is dependent on accepting some prior claim which itself is dependent on yet some prior claim, the truth of some premises must be accepted as immediate or basic, that is, not derived from other more basic truths. In other words, ultimately our reasoning process must begin with premises that cannot be proved by way of reasoned argument.

The question of how we arrive at these basic premises is important. It is a question to which many competing answers have been given. Aristotle's answer was that any well-trained, properly-functioning mind had the inborn capacity to intuit such basic truths. He believed that when people became familiar with an area of inquiry, after having studied it long and carefully, their minds would simply "see" or "intuit" that certain claims in that area were true, even though the truth of the claims could not be demonstrated by way of argument. As Aristotle says, "He who requires proof of first principles shows want of education." The axioms of a mathematical system and the law of noncontradiction are familiar examples of such basic premises. These principles must be assumed if other truths are to be inferred.

Others believe that there are other means for arriving at basic truths--means quite different from either reasoned argument or Aristotle's notion of intuition. Saints, poets, and scientists often talk of visions, insights, and revelations. No one familiar with either the world's religious texts or poetry would deny that in all cultures there have been reports of truths revealed in some sort of direct or immediate fashion. One problem for those who base their beliefs on such revelatory experiences is that what is revealed as "the truth" tends to vary from person to person and culture to culture. So, while the fact that there are such revelatory experiences is well-established, how one decides which conflicting claim is true is another matter. Clearly, conflicting claims cannot all be true.

The scope of such revealed truths is also a matter of controversy. One can ask whether any claim can be a candidate for an immediate truth and hence escape the need for further proof or demonstration. Are there perhaps areas of inquiry which, by their very nature, are not subject to reasoned proof and rational argument? Are there kinds of experiences that are so compelling that proof becomes unnecessary? Or are all beliefs ultimately subject to public debate and careful examination and critique? These are important questions over which there is much debate.

Disagreement over such basic issues, however, is not a problem. The value of open debate and the public discussion of competing beliefs is that when evaluation is open to the public, all interested inquirers can share in the debate. Each can add his or her part to the inquiry. Knowledge that is subjected to reasoned evaluation becomes "public property." All interested inquirers can retrace the steps of an argument or examine the evidence on all sides of an issue. In this respect there is something egalitarian about critical thinking; all persons can and should participate in the dialogue. The public nature of the reasoning process makes it antithetical to authoritarianism and elitism. In addition, when knowledge claims are open to public scrutiny, error is harder to conceal. Conversely, when knowledge is considered to be private and there is no shared methodology for evaluating the reasonableness of claims, the road to deception, error, and illusion is made easy for those who might desire the uncritical acceptance of certain positions.

1.4 Critical Thinking and Logic

In the following chapters, we emphasize the pedagogical principle that critical thinking and writing can best be understood, at least for beginners, as formal processes with clear strategies for success. We believe that critical thinkers and writers can develop their skills most quickly by learning to follow certain proven strategies as they read, think, and write.

In order to understand better the patterns of good reasoning, some knowledge of formal logic is required. Logic provides us with the blueprints for argumentative papers and some clear strategies for evaluating positions and arguments. It shows why some ways of reasoning are good and others unacceptable. It provides the foundation from which we evaluate competing positions.

Some students, however, may be skeptical about learning formal logic. They could point out that many people reason very well without having had such instruction. Socrates, for example, reasoned well but never had a course in logic. In fact, logic as a formal discipline was not developed until some forty years after Socrates' death, and the logical system we will learn was not fully developed until the nineteenth century. In response to such criticisms one can admit that some people, either by nature or by luck, do reason well. On the other hand, many do not, and they could certainly benefit from understanding the patterns of good reasoning. In fact, it is only through understanding the principles of logic that those who do reason well understand why their reasoning is good. They then understand what it means to say that a claim logically entails other claims. They understand that the notion of logical entailment is defined in terms of validity, that validity is defined in terms of logical form, and that the logical form of an argument can be displayed by reducing the argument to symbolic representations. So, if an understanding of logical entailment is essential to understanding and evaluating arguments, it is important to understand the fundamentals of logic.

Logic also provides us with a tool to clarify arguments. A logical analysis of an extended argument allows us to see how the various parts fit together. Without such knowledge, the evaluation of positions tends to become an intuitive rather than a formal process, and claims based on intuition, though sometimes correct, need to be evaluated by a standard procedure.

Another reason why the study of logic is important to critical thinking is that critical thinking about any subject requires us to make judgments, and judging is an evaluative activity. Critical thinkers are people who seek to evaluate fairly the reasonableness of claims, arguments, institutions, values, and activities. When we make such judgments, we assume standards to which we appeal for justification. The principles of formal deductive logic, the methods of inductive logic, and the norms of informal logic and fallacy theory provide us with well-established standards or models to which we can appeal. Inductive logic has proved to be a fruitful way of evaluating the evidence for a claim, and deductive logic is "truth-preserving" in the highest sense: i.e., given the rules of deductive inference, if we begin with true premises and reason correctly, we can be assured that we will end with true conclusions. Knowledge of standard informal fallacies allows us to quickly identify instances of fallacious reasoning.

We must, of course, admit that in everyday discourse it is often difficult to attain the clarity and rigor present in the ideal of formal logic. We know only too well how complex and ambiguous arguments in natural language can be. But in spite of such complexity, once we clearly understand what is being claimed and have identified the reasons given in support of the claim, we have a much better chance of evaluating its reasonableness.

A final argument for studying logic is that even those who would criticize logic's usefulness must first understand it. Otherwise they cannot formulate and evaluate their criticisms. Anyone who opposed learning logic but who did not understand it would be as comic as those who oppose learning foreign languages but speak only their native tongue.

In conclusion, because critical thinking is a practical activity, not only should we be able to evaluate the claims made by others, but we should also be able to construct cogent arguments in support of our own positions. Ultimately, these logical skills should provide the core of the writing process. An essay can be seen as an extended argument in which the thesis is one's conclusion and the supporting paragraphs are the premises. With some knowledge of the formal structure of valid arguments, one can also develop a simple method for constructing valid arguments used to support or criticize positions. Such knowledge is useful because it shows how complex it can be to write a paper that argues persuasively for a position. It shows how each premise must itself be questioned and supported by even more fundamental premises. The method also shows how important it is to have a clear understanding of the meaning of the terms in a thesis. For example, to argue that an educational policy is just first requires proposing a definition for "justice," and, as we know, given the political debates over what constitutes "justice," constructing such a definition is not easy. This, more than any other task, should lead to an attitude of healthy skepticism when one is told that certain issues are clear and that the truth is obvious. It also shows the necessity of asking fundamental questions prior to arguing about particular issues.

We have seen that, rather than being abstract or useless, critical thinking, reading, and writing are perhaps the most practical areas of study. The strategies, knowledge, and skills learned here can be applied to many areas of life where human deliberation, choices, and actions are important.

1.5 Critical Thinking and Writing

As we have already seen, critical thinking is useful in those classes where students are asked to write evaluative essays or papers (1.3). We have also seen that knowledge of logic as a normative ideal (1.4) is helpful whenever we are asked to evaluate positions or construct papers that argue for a thesis or a particular position. Yet beyond these obvious reasons, the relationship between critical thinking and writing becomes more complex.

Writing is an especially important tool for the critical thinker because written discourse has both a precision and a power lacking in the spoken language. It must be precise because, being cut off as it is from the inflections and gestures of speech, it communicates no more and no less than what the individual words, combined into larger units of thought, say. Its power must be derived from structure, word choice, tone, and logic. As critical writers, we must therefore select our words and structure our thoughts in such a way that they say exactly what we mean as clearly, concisely, and persuasively as possible so that they cannot be misunderstood to mean something other than what we mean. As critical readers we look for this clarity of language and precision of thought in the writing of others. We will not be satisfied with a superficial glance at a text but will study carefully its diction, style, tone, and logical organization as we critically evaluate its claims and arguments. Finally, the written language has a particular power denied to the spoken language because through written texts we hear the voices of the past communicating the thoughts and ideas of people and cultures long vanished from us. We may be sure that the written language remains the medium of communication in which ideas are best conveyed to others, whether they be those alive today or those who will live hereafter.

Writing not only communicates ideas but also is a process by which ideas are clarified and corrected. This goes hand-in-hand with critical thinking. Matthew Lipman, founder and director of the Philosophy for Children Program, has pointed out that critical thinking not only is thinking that employs a criterion-- e.g., logic or rationality--but that critical thinking also is thinking that is self-correcting.[8] Critical thinking is thinking that looks at its own arguments, positions, or conclusions and is continually working to evaluate and refine them.

At the same time, experts in written composition tell us repeatedly that the purpose of writing is to clarify our own thinking, provide information and evidence to the reader, and persuade the reader of the strength of our position. This process involves writing, revision, and editing. According to Strunk and White, one mark of a good writer is the willingness to be critical of what is written and, if necessary, to make the necessary revisions for clarity and understanding.[9] Writing, like critical thinking, is a self-correcting process. We can learn from our mistakes only if we can first identify our mistakes.

Many skills are needed for this self-correcting process. If what is corrected is one's grammar or style, then one must have knowledge of the rules of grammar (see Appendix B) and, to use the language of Strunk and White, "the elements of style." We use language skills and will continue to use them whether or not we know the rules. But as critical thinkers practicing the art of writing clear, convincing prose, we will be keenly interested in developing whatever skills will enhance this endeavor. As we write, we will become more and more conscious of the issues of clarity and precision in language and become more and more adept at utilizing and internalizing the commonly accepted conventions of grammar and the most effective techniques of style.

If what is to be criticized and corrected is the reasoning that underlies one's position, what is needed is knowledge of the principles that underlie good reasoning, i.e., logic. Grammar, style, and logic provide important standards by which we evaluate and enhance our own writing.

We write not merely to enhance and clarify our own thinking process but, more importantly, to present our thinking about a subject to others and to convince them of the cogency of our position. If we do not succeed in accomplishing the latter, we will at least stimulate others to think critically about the subject. We hope they will build their own counterarguments, responding to our position and thus clarifying and refining their own thinking as they do so. Writer and reader, transmitter and receiver, are thus engaged in a process together. Discourse becomes dialogue. Writers must also remember that they are communicating through the written word to some specific audience. Level of diction, tone, techniques of style, choice of evidence, and form of argumentation all will be governed by the writer's identification of and responsiveness to this audience.

Another relationship between critical thinking and writing is a formal one. One might argue for the following analogy: the study of grammar and syntax is to a well-formed sentence, what the study of logic is to an essay. The rules of grammar and syntax tell us what is acceptable in a well-formed sentence; the patterns of logic define the acceptable patterns of reasoning that will guide the development of an essay. An analysis of these patterns will be the subject of much that follows.

Finally, one of the greatest obstacles to writing good papers is that students often have little to say about an issue or position taken in a text. An understanding of critical thinking can be helpful by giving students the important strategies and tools for critical analysis that in turn will allow them to have something reasonable to say about a text.

1.6 Conclusion

While a more complete discussion of the nature of critical thinking follows, it should now be obvious from this introduction that enhancing one's critical abilities is a good thing. The reasoning skills that are central to critical thinking play an important role in a variety of human endeavors. For example, reading classic texts that present us with a variety of competing ideas requires a critical mind. Without strategies for evaluating competing claims and arguments, confusion or skepticism may result. Writing papers in support of an interpretation or position requires that we understand how to support a thesis, i.e., how to present a well-formed, reasoned argument.

All of these reasons for the value of critical thinking do not mean, however, that the development of human rationality is the answer to all personal or social problems. First, there is the question of how much our rational capacities affect our actions. It seems possible for us to know what the reasonable course of action is and still not be able to pursue it. For example, someone may decide that it is reasonable to do a lot of studying for an exam but be unable to resist the sirens of television or a social function that interfere with study. Persons may know that it is reasonable not to smoke and yet be unable to quit. The human psyche is complicated. The forces that make us behave as we do often remain a mystery.

Second, our reasoning is limited because we are more comfortable with and skilled at reasoning about means to attain our ends than we are at evaluating our ends or goals. Typically, our ends or goals are a function of our individual histories and the cultures in which we live. This is not to say that we cannot rationally choose goals or that a critical evaluation of values is not possible but rather that such evaluation and choice are difficult.

Third, while critical thinking about various beliefs or courses of action is a good thing to do, we are always limited by our inability to possess all the information we might desire in coming to a conclusion. In many of life's most important areas, the evidence we need to warrant our decisions will always be incomplete. Nonetheless, in spite of such limitations, we must make decisions, and learning to think clearly and carefully about our decisions can be a great help.

Exercise 1.6

1. Imagine that some friend at home wanted to know the use of studying reasoning and logic. Compose a short essay summarizing your response to your friend's question. Give plenty of reasons for your position.

2. While this chapter gave many reasons for the importance of becoming a critical thinker, it offered little in the way of a critique. List two or three reasons against teaching critical thinking or the emphasis upon logic and reasonableness.

3. In the dialogue "Meno," Socrates claims that if one knows what is good, one will do it. Socrates also claims that what is good is also what is reasonable. Hence, to know what is reasonable would entail that one acted on that knowledge. Comment upon this line of thought. Is it a reasonable argument? Do we always follow reason?

Notes for Chapter One

[1] See *Academic Preparation for College: What Students Need to Know and Be Able to Do* (The College Board, 1981). Since that time many educators, such as Richard Paul at Sonoma State University, have produced critical thinking guide books of lesson plans for all grades from kindergarten up. Each "typical" lesson in the lesson plan is revised to emphasize critical thinking.

[2] Benjamin Barber, "The Philosopher Despot: Allan Bloom's Elitist Agenda," *Harper's Magazine*, January 1988, pp. 61-65.

[3] This sort of self-referential problem with relativism has been clear since Plato's *Theatetus*. More recently, Harvey Siegel has a long discussion and defense of Plato's position in his book, *Relativism Refuted* (Dordrecht: D. Reidel, 1988). See especially Chapter One.

[4] Albert Ellis, *Reason and Emotion in Psychotherapy* (Secaucus, N.J.: The Citadel Press, 1962), p. 36.

[5] Ellis, pp. 36-37.

[6] Ralph Johnson and Tony Blair, *Logical Self-Defense* (Toronto: McGraw-Hill Ryerson, 1983).

[7] See especially his *Metaphysics*, Book I, Chaps. 1-3.

[8] Matthew Lipman, "The Concept of Critical Thinking," *Teaching Thinking and Problem Solving*, Vol 10, Issue 3, (May-June 1988), p. 5.

[9] William Strunk, Jr. and E. B. White, *The Elements of Style*, 2nd ed. (New York: MacMillan, 1972), p. 64.

Reading Assignment

Read Plato's "Allegory of the Cave." Answer each of the following discussion questions.

1. Briefly summarize the allegory. What do the various elements of Plato's allegory represent: the cave, the shadows, the prisoners, the chain, the keepers of the fire and the artifact carriers, the path out of the cave, the daylight....?

2. Why would anyone in the cave suspect that there was something more than the shadows?

3. By what method does one most effectively get people out of the cave? How does one know if one is out of the cave? Isn't it possible that we are substituting one set of false ideas for another?

4. If someone who has left the cave re-enters it, how do things then appear? For example, how might "old friends" appear? How might these "friends" respond to the person coming back into the cave?

5. What are the major forces that keep people from escaping their "caves"?

6. Do not all people live in some cave? Are all caves (societies) equally good or bad? How can we distinguish the good ones from the bad? When we make such distinctions, what are we assuming? Are such assumptions problematic?

7. Socrates claims that those who have escaped the cave should be made to return and rule the state. What reasons does he have for this? Does his argument apply to modern citizens? Why or why not?

8. Socrates claims that the true blessings of life are virtue and wisdom, not "silver and gold." Do you agree? If so, why do so many spend more time seeking the latter than the former? Do you think there is any relation between materialism and being a prisoner?

The Allegory of the Cave [*]

Plato

And now, I said, let me show in an allegory how far our nature is educated or uneducated -- Behold! a group of human beings living in an underground cave, which has a passage that leads towards the light. Here they have been from their childhood. They have their legs and necks chained so that they cannot move, and can only see before them, being prevented by the chains from turning round their heads. Above and behind them a fire is blazing, and between the fire and the prisoners there is a raised way, with a low wall built along the way, like the screen which marionette players have in front of them, over which they show the puppets.

I see.

And see also, I said, men passing along the wall carrying all sorts of artifacts: vessels and statues, as well as figures of humans and animals made of wood and stone and various materials. These appear atop the wall. Some of them are talking, others silent.

You have shown me a strange image, and they are strange prisoners.

Like ourselves, I replied, would not these people see only their own shadows or the shadows of one another, which the fire throws on the opposite wall of the cave?

True, he said. How could they see anything but the shadows if they were never allowed to move their heads?

And of the objects which are being carried, in a like manner they would see only the shadows?

Yes, he said.

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[*] From The Works of Plato, tr. B. Jowett. (New York: The Dial Press).

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And if they were able to converse with one another, would they not suppose that they were naming what was actually before them?

Very true.

And suppose further that the prison had an echo which came from the other side, would they not be sure to fancy when one of the passers-by spoke that the voice which they heard came from the passing shadow?

No question, he replied.

To them, I said, the truth would be literally nothing but the shadows of the artifacts.

That is certain.

And now look again and see what will naturally follow if the prisoners are released and cured of their ignorance. At first, when any of them are liberated and compelled suddenly to stand up, turn their heads round, and walk and look towards the light, they will suffer sharp pains. The glare will distress them, and they will be unable to see the realities of which in their former state they had seen as shadows. Conceive then some one saying that what they saw before was an illusion, but that now, they are approaching nearer to true being, with their eyes turned towards more real existence. What will be their reply? And you may further imagine that their instructor is pointing to the artifacts as they pass and requiring them to name them, -- will they not be perplexed? Will they not fancy that the shadows which they formerly saw are truer than the objects which are now shown to them?

Far truer.

And if they are compelled to look straight at the light, will they not have a pain in their eyes which will make them turn away to take refuge looking instead at the objects which they can more easily see, and which they will conceive to be in reality clearer than the things which are now being shown?

True, he said.

And suppose once more, that they are reluctantly dragged up a steep and rugged ascent and held fast until they are forced into the presence of the sun itself, are they not likely to be pained and irritated? When they approach the light, their eyes will be dazzled, and they will not be able to see anything at all of what is now called reality.

Not all in a moment, he said.

They must grow accustomed to the sight of the upper world. First they will see the shadows best, next the reflections of men and other objects in the water, and then the objects themselves; then they will gaze upon the light of the moon and the stars and spangled heaven, and they will see the sky and the stars by night better than the sun or the light of the sun by day?

Certainly.

Last of all they will be able to see the sun, and not its mere reflection in the water; they will see it in its own proper place and not in another, and they will contemplate it as it is itself.

Certainly.

They will then proceed to reason that the sun is that which gives the season and the years, is the guardian of all that is in the visible world, and, in a certain way, is the cause of all things which they have been accustomed to behold?

Clearly, he said, they would first see the sun and then reason thus.

And when they remembered their old habitation and what passed for wisdom there and their fellow prisoners, do you not suppose that they would pity them?

Certainly, he would.

And if the prisoners were in the habit of conferring honors among themselves on those who were quickest to observe the passing shadows and to remark which of them went before, which followed after, and which occurred together; and those who were therefore best able to draw conclusions about the future, do you think that those who escaped would care for such honors and glories or envy the possessors of them? Would they not say with Homer,

"Better to be the poor servant of a poor master,"

and to endure anything, rather than think as they do and live after their manner?

Yes, he said, I think that they would rather suffer anything than entertain these false notions and live in this miserable manner.

Imagine once more, I said, our prisoners coming suddenly out of the sun and being placed in their old situation; would they not be certain to have their eyes full of darkness?

To be sure, he said.

And if there were a contest and they had to compete in measuring the shadows with the other prisoners who had never been beyond the cave, while their sight was yet weak, and before their eyes had become steady (and the time which would be needed to acquire this new habit of sight might be very considerable), would they not seem ridiculous? Men would say of them that up they went and down they came without their eyes, and that it was better not even to think of ascending. So, if any one tried to free another and lead them up to the light, let them only catch the offenders, and they would put them to death.

No question, he said.

This entire allegory, I said, you may now append, dear Glaucon, to the previous argument;[1] the prison house is the world of the senses, the light of the fire is the sun, and you will not misapprehend me if you interpret the journey upwards to be the ascent of the soul into the intellectual world of ideas, at least according to my belief, which at your desire, I have expressed -- whether rightly or wrongly God only knows. But, whether true or false, my opinion is that in the realm of knowledge the idea of Good appears last of all, and is seen only with extreme effort; and, when seen, is also inferred to be the universal author of all things beautiful and right, parent and lord of light in this visible world, and the immediate source of reason and truth in the intellectual world; and that this is the power upon which he who would act rationally either in public or private life must have his eye fixed.

I agree, he said, as far as I am able to understand you.

Moreover, I said, you must not wonder that those who attain to this beatific vision of the Good itself are unwilling to descend to human affairs, for their souls are ever hastening into the upper world where they desire to dwell. This desire of theirs is very natural, if our allegory may be trusted.

Yes, very natural.

And is there anything surprising if one who passes from divine contemplations to the pettiness of human affairs cuts a sorry figure and appears ridiculous? If, while his eyes are blinking and before he has become accustomed to the surrounding darkness, he is compelled to fight in courts of law or in other places about the images or the shadows of images of justice, and is endeavoring to meet the conceptions of those who have never yet seen absolute justice, will he not appear ludicrous?

Anything but surprising, he replied.

Anyone who has common sense will remember that the bewilderments of the eyes are of two kinds and arise from two causes, either from coming out of the light or from going into the light. This is equally true of the mind's eye and the bodily eye. Anyone who remembers this when confronted with persons whose vision is perplexed and weak, will not be too ready to laugh. They will first ask whether that soul has come out of the brighter life and is unable to see because unaccustomed to the dark, or having turned from darkness to the day is dazzled by excess of light. And they will count the first happy in such a condition and state of being, and they will pity the other. If they have a mind to laugh at the soul which comes from below into the light, there will be more reason in this than in the laugh which greets the person who returns from above out of the light into the den.

That, he said, is a very just distinction.

But then, if I am right, certain teachers must be wrong when they say that they can put knowledge into the soul which was not there before, like sight into blind eyes.

They undoubtedly say this, he replied.

Whereas, our argument shows that the power and capacity of learning exists in the soul already and that just as the eye was unable to turn from darkness to light without the whole body, so too the instrument of knowledge can only by the movement of the whole soul be turned from the world of sense or becoming into that of ideas and being, and learn by degrees to endure the sight of being, and of the brightest and best of being, or in other words, of the Good.

Very true.

And must there not be some art which will effect conversion in the easiest and quickest manner, not implanting the faculty of sight, for that exists already, but has been turned in the wrong direction, and is looking away from the truth?

Yes, he said, such an art may be presumed.

And whereas the other so-called virtues of the soul -- courage, temperance, and justice -- seem to be akin to bodily qualities, for even thought they are not originally innate in the person, they can be implanted later by habit and exercise, the virtue of wisdom more than anything else contains a divine element which is always present. By this conversion and proper orientation, it is rendered useful and profitable; without proper training, hurtful and useless. Did you never observe the narrow intelligence flashing from the keen eye of a clever rogue--how eager he is, how clearly his paltry soul sees the way to his end; he is the reverse of blind, but his keen eyesight is forced into the service of evil, and he is mischievous in proportion to his cleverness?

Very true, he said.

But what if there had been a circumcision of such natures in the days of their youth, and they had been severed from those sensual pleasures, such as eating and drinking, which like leaden weights were attached to them at their birth, and which drag them down and turn the vision of their souls upon the things that are below--if, I say, they had been released from these impediments and turned in the opposite direction, the very same faculty in them would have seen the truth as keenly as they see what their eyes are turned to now.

Very likely.

Yes, I said, and there is another thing which is likely, or rather a necessary inference from what has preceded, that neither the uneducated and uninformed of the truth, nor yet those who never make an end of their education, will be able ministers of State;[2] not the former, because they have no single aim or focus which guides all their actions, private as well as public; nor the latter because they will not act at all except upon compulsion, fancying that they are already dwelling apart in the islands of the blessed.

Very true, he replied.

Then, I said, the business of us who are the founders of the State will be to compel the best minds to attain that knowledge which we have already shown to be the greatest of all--they must continue to ascend until they arrive at the good. But when they have ascended and seen enough, we must not allow them to do as they do now.

What do you mean?

I mean that they remain in the upper world, but this must not be allowed; they must be made to descend again among the prisoners in the cave and partake of their labors and honors, whether they are worth having or not.

But is not this unjust? he said; ought we to give them a worse life, when they might have a better?

You have again forgotten, my friend, I said, the intention of legislators. They do not aim at making any one class in the State happy above the rest; the happiness was to be in the whole State. The legislators hold the citizens together by persuasion and necessity, making them benefactors of one another; to this end they created them, not to please themselves, but to be instruments in binding the State together.

True, he said, I had forgotten.

Observe, Glaucon, that there will be no injustice in compelling our philosophers to take care and guide others; we shall explain to them that in other States, men of their class are not obliged to share in the toils of politics: and this is reasonable, for they grow up at their own sweet will, and the government would rather not have them. Being self-taught, they cannot be expected to show any gratitude for a culture which they have never received. But we have brought you into the world to be rulers, kings of yourselves and of the other citizens, and have educated you far better and more perfectly than they have been educated, and you are better able to share in the double duty. Wherefore each of you, when his turn comes, must go down to the general underground abode and get in the habit of seeing in the dark. When you have acquired the habit, you will see ten thousand times better than the other inhabitants, and you will know what the many images represent because you have seen the Beautiful, the Just, and the Good in their truth. And thus our State is administered in a spirit unlike that of other States, where men fight with one another about shadows only and are distracted in the struggle for power, which in their eyes is a great good. Whereas the truth is that the State in which the rulers are most reluctant to govern is always the best and most quietly governed, and the State in which they are most eager, the worst.

Quite true, he replied.

And will our pupils, when they hear this, refuse to take their turn at the toils of State, when they are allowed to spend the greater part of their time with one another in the heavenly light?

Impossible, he answered; for they are just men, and the commands which we impose upon them are just. Hence, there can be no doubt that every one of them will take office as a stern necessity and not after the fashion of our present rulers of State.

Yes, my friend, I said; and there lies the point. You must contrive for your future rulers another and a better life than that of a ruler, and then you may have a well-ordered State; for only in the State which offers this, will they rule who are truly rich, not in silver and gold, but in virtue and wisdom, which are the true blessings of life. Whereas if they go to the administration of public affairs, poor and hungering after their own private advantage, thinking that hence they are to snatch the chief good, order there can never be; for they will be fighting about office, and the civil and domestic broils which thus arise will be the ruin of the rulers themselves and of the whole State.

Most true, he replied.

And the only life which looks down upon the life of political ambition is that of true philosophy. Do you know of any other?

Indeed, I do not, he said.

Endnotes

[1] Plato is here referring to his previous division of reality into four levels. First he divides reality into that which is present to the senses, "the visible world" or "the realm of appearances," and that which is present to the mind, "the intellectual world" or "the realm of knowledge." That which is present to the senses is further divided into the realms of "objects" and works of art or pictures that represent the objects. That which is present to the mind id divided into the realm of hypothetical knowledge, e.g., mathematics which must assume the truth of its axioms and the realm of forms or ideas. If we apply this four-part division to an example from geometry the ideas of triangularity would be at the highest level; the mathematical relations between the length of sides and angles would be at the level of mathematics, this level would include the principles of geometry. At the level of the senses, we would find instances of triangles that exemplify the "idea of triangularity." At the lowest level we find pictures or re-presentations of triangles. For Plato, the idea is the most real, being perfect and unchanging, while the representation is the least real.

[2]The allegory takes place within the larger discussion of the nature of justice. Socrates and Glaucon are engaged in creating an ideal state so that they might find a definition of "justice." The believe that an ideal state would surely be "just," and so by studying their utopia they could better understand the nature of justice. The allegory of the cave is an attempt to illuminate the nature of education for those who would "be able ministers of the state."

Chapter Two

What Is Critical Thinking?

People generally quarrel because they cannot argue.
G. K. Chesterton

2.1 The Nature of Critical Thinking

This chapter will provide a clear idea of what critical thinking is, what it is not, and what sorts of hindrances thwart its development.

Most of us engage in critical thinking every day. Our goal is to refine and enhance abilities that we already have and enjoy using. Through studying the skills and abilities of critical thinkers, we will become more self-conscious and critical of our own thinking.

We can begin to understand the idea of critical thinking by examining the phenomenon of human discourse. When we converse with others, we express ideas or beliefs and then clarify or explain them. Often, those with whom we are speaking ask us to give our reasons for holding a position or making a specific claim. For example, someone may say, "I think Sam is a good guy. He is pleasant to be around." Another person may ask what evidence there is to believe that Sam is good other than that he is pleasant to be with. "Is being pleasant company enough to call a person good?" Likewise, when others make claims, we often respond by asking, "Could you tell me why you believe that? What reasons do you have to support your claim?" The need for clarification and supporting reasons in human discourse is the beginning of critical thinking.

Another person need not be present in order for us to think critically. While reading a novel, a play, or an article, or while listening to a news program, we might not understand the claims that are made and wish that they were more clearly stated or that the reasons in support of the claims were given. Our natural desire to understand what is being communicated and our disposition to pass judgment or evaluate--that is, to accept, deny, or question the merit of positions--is the foundation of critical thinking.

Because people often disagree in their evaluations, they use arguments in an attempt to settle their disagreements. By argument we do not mean a shouting match between parents and children who disagree about what is and is not suitable attire for the high school prom or about where one should spend spring break. By argument we mean the process by which people present and attempt to support their ideas. Presenting and supporting our ideas involves giving reasons which, if accepted, would persuade or at least incline others to accept the position. In this sense, many discussions with our friends are arguments. We first make claims or express opinions; then we explain or clarify our position; finally we give reasons why we believe other reasonable people should choose the same position. Sometimes our friends agree, but often they disagree. They then give reasons why our position or decision is unacceptable and offer alternative positions for our consideration. Such discussions are examples of critical thinking and argumentation. The participants are being critical thinkers. They are, to use a metaphor from education, being selective filters rather than sponges that blindly and indiscriminately absorb any idea or value whatsoever. They seek the reasons for holding or rejecting a position and ask whether or not the reasons are acceptable.

Even though speaking and discussion predate other acts of communication, critical thinking is obviously not limited to conversation. Writing, too, is an act of clarifying claims, providing reasons for our beliefs, and honestly evaluating alternative positions.

When we are asked to write papers, we are asked to present a clear thesis and to support it with paragraphs which present reasons for our position. These reasons can come either from textual material or from other evidence. Sometimes we are asked to evaluate alternative interpretations of a text. When we write such papers, we are in essence presenting an argument in written form. Such writing should be a controlled, premeditated exercise in argumentation that is intended to convince readers that our position (the thesis) is both important and, given the alternatives, a reasonable one to hold. (Instruction and strategies in writing critical papers will be the subject of Chapter Seven.)

In general, any time we present a position, give our reasons for it, and defend it against alternatives, we are thinking critically. In critiquing a claim, belief, value, action, policy, or institution, whether verbally or in writing, we are putting forth arguments, rather than merely stating an opinion, making a claim, or indicating a preference.

The problem for most of us is that while we are inclined to put forth and defend opinions and to critique those who disagree with us, we are not very skillful at such endeavors. What we intend to be a careful dispassionate discussion of an issue quickly gets confused or turns into a shouting match with friends or parents--that other sense of "argument." What we need are some generally agreed-upon strategies for guiding discussions, developing arguments, and critiquing positions. We also need to be aware of the appropriate psychological dispositions which, if developed, will help all of us be better critical thinkers. We will begin our study of critical thinking and its relation to writing by examining such strategies, principles, and dispositions.

2.2 Some General Principles for Critical Discussion

Very often what was intended to be a reasonable critical discussion of an issue turns into a squabble or worse. This may happen because, unlike in other structured human activities such as scientific experimentation, court trials, or games such as chess, the persons engaged in the discussion have not agreed upon a set of principles and procedures to guide their activity. What we need is a set of behavior-guiding principles to aid the progress of discussions. Without such principles, the participants do not know which tactics are legitimate and allowable and which are inappropriate, misguided, or fraudulent and thus should be forbidden. If we assume that the purpose of a discussion is either to discover the truth or decide what position is most reasonable, rather than simply winning or ending the exchange, then the participants should adopt certain principles that will enhance their probability of success. The following principles are formulated with that end in mind. Most also apply to reading texts critically and to writing argumentative papers.[1]

#1 The Fallibility Principle

The purposes of a critical discussion include discovering the truth or deciding which alternative position is most reasonable to hold. People enter such discussions often believing that what they believe is true or that their position is most defensible, and that what others believe is false or indefensible. Yet competing or contradictory positions cannot all be true. Hence, each member of the discussion must admit the real possibility of being wrong or possessing only partial truth. Otherwise, the discussion will not reach its goal.

Critical discussions should be seen as opportunities for us to discover our errors and progress toward the truth. We can do this only if we admit that we are all fallible and at best possess but part of the truth.

#2 The Egalitarian Principle

All members of the discussion have equal rights to present positions, to ask questions, and to offer defenses. Each member should be considered a co-inquirer in the discussion. Even if some are more knowledgeable, each has the right to question claims and present alternative positions. To deny this is to assume that some members are infallible, which denies the first principle of discussion, the Fallibility Principle.

#3 The Clarification Principle

Any member of the discussion is entitled to a clarification of terms or concepts used in the articulation of a position. If asked, any member of the discussion is obligated to explain or clarify the terms in question. Because we cannot debate the reasonableness of a position unless it is first understood, critical thinkers must be willing to explain clearly their ideas to other members of the discussion.

#4 The Reasons Principle

Any claim that is made can be challenged, and the member of the discussion who makes the claim is obligated to provide reasons in support of the claim. A failure to do so means that for purposes of discussion the claim may be rejected. This does not mean that the claim is necessarily false, but only that no one has provided the skeptic any reason to believe the claim.

#5 The Relevance Principle

Claims can be defended *only* by supporting reasons or by evidence that is relevant to the issue in question. A reason or point is irrelevant if its being true has no bearing on the truth or falsity of the position or thesis being defended. (The application of the relevance principle to writing will be explained in Chapter Seven.)

#6 The Acceptance Principle

A position or claim is considered to have been successfully defended if the truth of the claim is highly probable given the mutual acceptance of the evidence for the claim by the members of the discussion. (An explanation of how one evaluates evidence will follow in Chapter Five.)

#7 The Entailment Principle

A position or thesis is considered to have been successfully defended if the position is logically entailed by (is a necessary consequence of) other claims that are mutually accepted by the members of the discussion. (A discussion of logical entailment will follow in Chapter Four.)

#8 The Rejection Principle

A position or thesis is considered to have been successfully rejected if 1) it can be shown to be logically inconsistent or to entail a contradiction; or 2) the evidence provided to support the position is irrelevant; or 3) its acceptance logically entails consequences that no one in the discussion is willing to accept. Again, this does not mean that the position is false, but only that members of the discussion can legitimately reject it. Further evidence may change our minds even though present arguments are severely flawed.

These principles can be helpful in learning to discuss or think critically about issues. These principles, however, are not fail-safe. For example, Principle #3 asserts the obligation to clarify the terms of a claim, but one can easily imagine disputes over what counts for an adequate level of clarification. What seems obvious to some may not seem so to others. For this principle to succeed, the participants in the discussion need to have some idea of what is considered a good definition. Disputes can also arise over whether an intended supporting claim is relevant, that is, whether the truth or falsity of what is given in support of a claim affects the probability of the claim's being true. Because of Principle #4, the Reasons Principle, disputes over relevance require that the person whose reasons have been challenged as irrelevant is obligated to show why the claim or evidence is relevant to the issue in question.

While those who enter into a dispute can see that adhering to these principles would aid in the resolution of disagreements, it is also obvious that such principles will not solve all disagreements. On the other hand, such principles, flawed though they may be, are better than no rules to guide our debates.

Exercise 2.2

1. The principles for critical discussion were stated in a rather uncritical, authoritarian fashion. Imagine that you have been asked to give reasons to justify each of the principles. In your clearest, grammatically-correct English, write a short paragraph justifying each principle. Explain why persons in a dialogue should adopt each principle.

2. On what subjects do you find that people are least inclined to practice the Fallibility Principle? Why is this so?

3. Are there problems with the Egalitarian Principle, given that in a classroom not all members possess equal knowledge?

2.3 What Critical Thinking Is Not

We have seen that one of the characteristics of critical thinking is its emphasis on using reasoning and logic to provide arguments for positions. Notwithstanding, we should also be aware that not all thinking that employs reasoning and logic is critical thinking. We need to distinguish critical thinking from other forms of thinking, i.e., rationalization, "weak-sense" critical thinking, and instrumental reasoning.

Psychologists define *rationalization* as the use of reason or the presentation of arguments for the purpose of masking the real reasons for actions. People often give socially acceptable reasons for an action that in reality is done for unacceptable or unpopular reasons. For example, a soldier who enjoys killing may claim that he is simply a "good patriotic soldier" doing his duty. Smokers often give long, elaborate rationalizations for why they smoke in order to hide the fact that they lack the will to stop. Since Plato's criticism of the rhetoricians and sophists of Athens for teaching students to use reason to serve personal ends rather than to pursue an honest inquiry into "the good, the true, and the beautiful," we have understood that humans seem inclined to use their rational capacities to mask their true motives and to explain in acceptable terms their selfish actions.[2]

If we define critical thinking as the honest evaluation of beliefs and actions in light of the alternatives, then rationalization is the antithesis to critical thinking.[3] Moreover, if rationalization becomes the dominant use of reason in our lives, then we are not using reason to inquire honestly or to deepen our understanding of an issue but rather to mask our weaknesses and justify our baser inclinations. We should always be aware that there is a qualitative difference between honestly reflecting on what to believe and do and uncritically following our inclinations and only afterwards seeking reasons to justify our preferences. Hence, even though both employ reason and logic, rationalization and critical thinking are distinctly different processes. The former attempts to justify what we have already decided to believe and to do; the latter seeks to arrive at reasoned judgment in light of alternatives.

Another use of reasoning that does not qualify as critical thinking is what has been termed *"weak-sense" critical thinking.*[4] Both Plato, in his "Allegory of the Cave," and modern anthropologists have pointed out that persons living in different times and places have quite different ways of viewing the world. This means that simply by living in our particular culture, we naturally pick up certain ethnocentric values. As a result, what seems entirely reasonable and hence "natural" to people living in one culture may appear irrational to people living in another. For example, the African Bushman's lack of concern for material possessions appears very "unnatural" to Americans, while Bushmen view our concern for owning material objects to be equally strange. The point is that people make certain assumptions based on their culture about the way things are or what is really important and what is not. Often we tend to seek arguments that justify only our own culturally-given assumptions and do not evaluate those arguments or those assumptions critically. Because we tend to assume that our values or our view of human nature should apply to all people at all times and in all places, we are more often than not inclined to create arguments to justify these prejudices and to use critical thinking only to critique the positions of others. In effect, we take seriously our own way of life and are unwilling to look fairly at other points of view. We suffer from a sort of intellectual and moral myopia.

A third and related variation of this phenomenon of "thinking that is not critical thinking" is called instrumental reasoning. Reasoning can be employed to establish either ends (goals) or means to the ends. As we have already seen, it is usually more difficult to evaluate our ends or values than to evaluate the means used to attain those goals. Our culture--parents, friends, media, and education--tends to define for us those values and goals we deem worthy of pursuit. Our practices, values, and institutions reflect our culture's particular way of looking at the world. As individuals of that culture, we then use reasoning and logic only to determine the ways by which we may attain these socially-given "ends." This manner of thinking that considers only means is called *calculative* or *instrumental reason.*

To think carefully only about the reasonableness of culturally-given values or ends leaves us with many problems. Contemporary philosophers have pointed out that humans, especially in a technological society, tend to suffer from intellectual inertia. We are lost in what some thinkers have called "average-everydayness."[5] That is to say, unless our everyday way of seeing things results in a problem or crisis, we do not question our assumptions, values, or particular way of looking at the world. The problem is that because many of our values and goals are functions of peer pressure, social systems, and the media, we spend our lives working--sometimes in boring difficult jobs--to achieve goals that we have not ourselves chosen. In such a condition, we are inauthentic; we are not being our own persons. We employ reasoning, but we are not critical thinkers. We are proficient only in reasoning about means to goals that we have neither chosen nor evaluated.

The instrumental use of human reason calculates the most appropriate ways to attain pre-established ends. While choosing acceptable means to our ends is indeed an important function, as critical thinkers, we need also to evaluate the reasonableness of our goals or values. We must be aware of our innate tendency to accept values or goals simply because "everyone else does." We must learn to consider points of view which differ from our own and be willing to evaluate honestly our own values from the perspectives of others.

Human rationality which is employed *only* in an instrumental or calculative fashion can be a very dangerous tool. For example, it can be used to justify means to ends that are unacceptable for ethical reasons. Imagine Hitler and his colleagues thinking earnestly about how best to exterminate more of the Jewish people. Imagine Southern plantation owners deliberating on ways to get more labor out of their black slaves. Imagine investment bankers seeking ways to influence stock market trading. All these people would be using reason. However, if they have not evaluated critically the values that are guiding their actions, they are not thinking critically. (See Appendix F for a discussion of critical thinking and values.)

Unless we make this distinction between reasoning about ends and reasoning about means, reason and logic can be mistakenly faulted for many abuses. We must see that in cases such as Hitler thinking about ways to exterminate the Jewish people, it is not human rationality that is at fault; it is rather the use to which humans with misguided motives have put this powerful tool. Ironically, it seems that it is only by using reason to examine and evaluate practices such as these that the unacceptable uses of reason can be identified and perhaps made right.

By endorsing the Fallibility Principle, critical thinkers assume that one essential purpose of thinking critically is to correct one's inadequate or partial understanding. Hence, one of the qualities of critical thinking, in its true sense, is that it attempts to be self-correcting, to replace false or poorly reasoned beliefs with true or carefully reasoned beliefs. Logic can be a powerful tool for helping us to see where we have erred in our thinking. Its analytic tools help us to clarify ideas and to see what is implied by the acceptance of some ideas and the rejection of others. Being equipped with such understanding better prepares us to identify and critique the uncritical uses of reason. Without such understanding, we, like the citizens of ancient Athens, can be more easily manipulated by modern day sophists and rhetoricians who are, as Plato claimed, adept at "making the better argument appear the worse, and the worse the better."

So, if these analyses have been correct, it is apparent that not all uses of reasoning are instances of thinking critically. The rationalization of our selfish desires or apparently unacceptable behavior, the "weak-sense" critical thinking by which we seek to justify only our own values and biases while criticizing only that with which we disagree, and the instrumental or calculative use of reason are all examples of using reason effectively, but they are not examples of thinking critically. Each lacks an honest evaluation of beliefs--both of one's own and of possible alternatives. Each involves acts of intellectual dishonesty in which persons lie both to themselves and to others, unfairly reject ideas that disagree with their own prejudices, and refuse to question their own culturally-given goals and values.

Exercise 2.3

1. Define briefly rationalization, "weak-sense" critical thinking, and instrumental reasoning, and then give two additional examples of each. Tell why these examples are not instances of critical thinking.

2. List as many reasons as you can why people are so often inclined to engage in rationalization or "weak-sense" critical thinking.

2.4 A Profile of a Critical Thinker

Given our general understanding of critical thinking, we may now construct a brief profile of what it means *to be* critical thinkers.[6] The words "to be" are emphasized because it is not sufficient for critical thinkers simply to have the *skills* necessary for thinking critically; critical thinkers must also have certain *dispositions* that lead them to think critically. They must be the sort of persons who, when a situation calls for critical thought, are both able and inclined to do so.[7] Just as we would not consider to be a musician a person who knew how to play music but never played, we would not call persons critical thinkers who possessed the requisite reasoning skills but did not *employ* them in situations in which it was appropriate to do so.

If we define a critical thinker as a person who is disposed to engage in "reasonable reflective thinking that is focused on deciding what to believe or do," and who honestly evaluates alternatives in light of available evidence, we can go on to ask what skills and dispositions would be most helpful to anyone who wishes to become such a person.[8]

As we have seen, critical thinking involves making decisions about both ends and means. Critical thinkers must decide what to believe, rather than blindly accepting a position or claim because it is pleasing or popular to do so. Only after they have decided what to believe do they decide what to do. Beliefs guide actions. In order to decide what to believe and do, they must evaluate the reasonableness of alternative beliefs or courses of action. In order to do this effectively, they need certain skills. While some authors have rather extensive lists of these skills, we have condensed them into five general categories.

Critical Thinking Skills

#1 Clarification

It seems a truism that we cannot criticize what we do not understand. That is to say, in order to evaluate a claim or position, critical thinkers must first be able to understand what is being said. Understanding involves clarifying the meaning of the claims made in a text or conversation. If we do not understand the claim being made, we can waste valuable time and much energy evaluating a position that the author does not really hold. For such clarification, summarizing and logical analysis are essential tools. (These skills correspond to the Clarification Principle in our list of Principles for Discussion. Chapter Three will provide instruction in how to clarify what one reads.)

#2 Analysis and evaluation of arguments

After clarifying the meaning of a claim or position, critical thinkers must be able to evaluate the reasons or evidence given in support of the claim. Evaluating the strength of a position requires that critical thinkers have an understanding of arguments, the fundamentals of logic, and knowledge of certain fallacious sorts of reasoning. (These skills will be the topics of Chapters Four and Six.) Evaluating the strength of evidence requires that critical thinkers have an understanding of the nature of evidence and inductive logic. (This will be discussed in Chapter Five.)

#3 Identifying assumptions and consequences

Another set of skills critical thinkers need is the ability to recognize the assumptions that underlie a claim in order to determine if they are reasonable. For example, a political policy may be based on a certain view of human nature or on the purpose of government. To evaluate the policy, we might question these assumptions by asking what evidence there is for them. Economic policies could also be based on particular views of human nature. To evaluate the reasonableness of such policies, we would first need to evaluate the reasonableness of their assumed view of human nature. If a psychological theory claims that all human behavior is a function of sexual desire, we might ask what evidence there is for that assumption. If a teacher claims that in order to understand a passage in a text, all students need is an understanding of each word, we might question the assumption that reading can take place apart from any understanding of the context of the prose. Theories based on such general assumptions need to be evaluated at the fundamental level of their background assumptions. Learning to uncover our assumptions as well as those of others is difficult but important task.

In addition to evaluating underlying assumptions, critical thinkers should also examine the logical consequences of accepting a position and should determine if those consequences are reasonable. If the consequences that follow logically from a position are not acceptable, we have reason to reject the position. For example, if we were evaluating the position of ethical relativism (the claim that right and wrong are not objective but are relative to each culture at each time period), we should be able to see that one consequence of such a position is that no notion of moral progress, either by individuals or societies, is possible. Consequently, no society at any time could be considered morally better than any other. Such a consequence would provide grounds for questioning the relativists' position because it entails consequences counter to what most inquirers generally believe: i.e., we take it as self-evident that societies in which people are free and happy are indeed morally superior to those in which many are slaves and unhappy. That is to say, we do judge some societies as being morally superior to others.

#4 Formulation and articulation of arguments

If we assume that critical thinkers have good reasons for the beliefs they hold, then they must be able not only to formulate and articulate their positions but also to outline the reasoning process that supports their beliefs. If we cannot articulate our reasons, then we will not be able to show others why what we believe and do is reasonable. One way to formulate our arguments in defense of a position is to create an argumentative outline which shows in a step-by-step fashion how the position we have taken is supported. The explanation of the position will be in clear, expository prose, i.e., speeches or papers that take a position and then show why the position, in light of alternatives, is a sensible one to take. (Instruction in this skill is included in Chapter Seven.)

#5 Consideration of alternatives

Our cultural backgrounds have a great deal of influence on how we view the world, what values we hold, and what appears reasonable to us. As a result, our egocentric or ethnocentric thinking tends to create blind spots and biases. We tend not to evaluate fairly those positions that differ from our own. In order to fight this tendency, critical thinkers must be able to follow sympathetically the arguments put forth by others. Only then can they understand the alternative positions and evaluate them fairly. This skill will be developed as we read essays that put forth views counter to our own, as well as when we discuss critically competing points of view.

Critical Thinking Dispositions

In addition to these critical thinking skills and abilities, there are certain *mental dispositions* essential to becoming a good critical thinker.

#1 Disposition not to accept unclear or problematic claims

Critical thinkers must be inclined to challenge unclear language and ideas and to expect that what is said, either by themselves or by others, be said clearly. This disposition corresponds to the Clarification Principle and the Egalitarian Principle discussed earlier in this chapter.

#2 Disposition to alter beliefs in accordance with new arguments and evidence

Critical thinkers are opposed to dogmatism, ideology, and uncritical acceptance of beliefs. They are disposed to seek new evidence or alternative points of view and to modify their beliefs in the light of their findings. They are inclined to examine alternative points of view honestly and without bias. No matter what the belief or position, they are inclined to ask, "What evidence would I accept to alter my belief or position?" It is important for critical thinkers to realize that if a person holding a belief believes there is no conceivable evidence or argument that would alter that particular belief, then that belief should be included in the category of bias, dogma, or ideology. A person cannot simultaneously adhere to the Falsification and Rejection Principles and believe that he or she is absolutely correct. Critical thinkers must be fallibilists who admit they could be wrong on any issue. With this assumption, intellectual honesty demands that they actively inquire and seek evidence for their beliefs. Without such inquiry, the reliability of a belief is always in question. It follows then that to change one's position based on new evidence is a virtue; to find a position and defend it at all costs is a vice. That is to say, for the critical thinker, truth or reasonableness is more valuable than blind commitment.

#3 Disposition to welcome criticism of beliefs or assumptions

Critical thinkers are persons who are concerned with truth and who maintain a reasoned approach to disputes. They realize that to have one's beliefs criticized by someone else is an effective way of discovering the weaknesses of a belief or position. Conversely, if one can answer a criticism fairly, one can feel more secure in one's beliefs. As Plato pointed out in his dialogue Gorgias, if the possession of truth is important to us, then our best friends will be just those people whose criticisms rid us of our illusions and errors. Conversely, our worst friends are those who allow us to remain deceived or in error by not challenging us to defend our beliefs. Not to welcome criticism is to assume either that one already knows the truth or that the truth is unimportant. To assume that one already knows the truth is to deny the Fallibility Principle. Not to be concerned with the truth of one's beliefs is not to have beliefs. This is because it is senseless to say, "I believe X but I do not think X is true." To have a belief is to believe that what one believes is true.

#4 Disposition to seek out and evaluate fairly alternative points of view

For any set of beliefs, it is not reasonable to believe that we have the whole truth or that others who disagree are wholly in error. For this reason alone, critical thinkers are disposed to seek out alternative points of view in order to learn what other perspectives have to offer. For example, if one is sympathetic to Marxist ideas, one has an intellectual obligation to read honestly the works of capitalist thinkers, and conversely, if one is a capitalist, one should honestly study Marxist writings. Only after examining both sides of an issue can we make an enlightened judgment.

Critical thinkers realize that all people are inclined to have biases or blind spots because of their ethnocentric and egocentric tendencies. They recognize these psychological tendencies as impediments to honest inquiry and reasoned belief. To compensate for those tendencies, critical thinkers should be disposed to be even more critical of their own beliefs than of the beliefs with which they disagree. That is to say, critical thinkers should actively seek out arguments against their own positions. To ignore the arguments of those who hold opposing viewpoints is to assume that one's own beliefs are infallible. This, of course, is contrary to the first principle for critical discussions, the Fallibility Principle.

#5 Inclination to respect intuitive insights or creative leaps in the thought process

There are many roads to discovering the truth. Critical thinkers are not unduly skeptical of intuition, creative insights, or other methods of discovery. Rather, they are disposed to examine the products of such phenomena carefully and honestly.

Intuitive and creative thought have played major roles in our history. In his Posterior Analytics, the philosopher Aristotle described a phenomenon which he called "quick wit." We might call the phenomenon "genius." When people are familiar with an area of study or with a series of problems, their minds can often leap over many steps of inference and hit upon a solution. Sometimes they simply see the solution to a problem. When such insights occur, we must then go back, fill in the steps, and try to evaluate the reasonableness of what we think we have discovered because, as we all know, sometimes even the intuitive flashes of geniuses turn out to be wrong. To assume that the products of such intuitions are exempt from evaluation or beyond criticism would be counter to the Fallibility Principle.

#6 Curiosity about general methodologies or strategies by which one might discover truth and detect error

Critical thinkers recognize that sometimes the thinking process works very well and at other times analysis and critique seem slow and difficult. Scientists continually refine their experimental methodologies and strategies in order to enhance their search for general laws that govern physical phenomena. Likewise, critical thinkers continually refine their understanding of the strategies and general processes by which good thinking occurs. Just as scientists are sometimes limited because they are not willing to change their paradigmatic methods of inquiry, so critical thinkers must realize that traditional methodologies may need to be re-evaluated and refined.

We could lengthen this list of skills and dispositions, but we will have accomplished much by learning and practicing these.

Exercise 2.4

List and briefly define each of the skills and dispositions of a critical thinker. Give an example of each. Then tell why each is important.

2.5 Hindrances to Critical Thinking

Just as there are specific abilities and character traits which enhance our ability to think critically, there are likewise certain beliefs, attitudes, and psychological traits that undermine our ability to evaluate beliefs and actions critically. If critical thinking were only one academic skill among others, perhaps our concern over these factors would not be great. But, as we saw in the first chapter, the skills and dispositions inherent in critical thinking are important for many human endeavors. Critical thinking is a means by which we can free ourselves from the bondage of socially imposed patterns of thought and values. It is the means by which we excel in school and in many jobs. Because of the importance of critical thinking, we must become aware of those psychological hindrances that interfere with its success.

#1 Ego problems

One hindrance to evaluating fairly our ideas and values is our tendency to treat our beliefs as if they were inseparable from our identities. Too often, when one of our beliefs is challenged by another person or by a competing idea, we mistakenly respond as if this challenge were an attack upon our own self-worth. We fail to realize that while our beliefs are important, we are not our beliefs. We should welcome such challenges. If we are correct in our belief, we can use the occasion to refine our arguments. If we are mistaken in our belief, we will understand why our belief is wrong and can alter in light of criticisms. If we are never challenged and yet our beliefs concerning some of life's most important questions are in error, we are in the worst of all situations.[9]

Just as we must learn to separate our beliefs from our egos or our notion of self-worth, we must also separate the beliefs of others from their personalities. All too frequently, because of some attitude we might have toward certain individuals, we may not listen carefully to their ideas and arguments. For example, we might so dislike Bertrand Russell for his opposition to Christianity and religious belief that we do not give a fair hearing to his arguments on the immorality of nuclear war.

Conversely, sometimes we so admire persons that we are not inclined to think critically about what they say. For example, children often so admire their parents or teachers that they accept everything these people say without carefully examining each claim. To respect a person does not mean to accept blindly every idea the person espouses. If one cares truly for another, one must help that person avoid error.

Christians urge people to separate the sin from the sinner, hating the former while loving the latter. Similarly, critical thinkers must learn to separate beliefs, values, and arguments from the people who hold them. Not to do so is to confuse the source of a belief with its reasonableness. Not to do so, as we shall see in Chapter Six, leads to logical fallacies.

#2 Distorted views of self

We have seen that to be a good critical thinker one must be willing to place one's own beliefs in question. One must also acquire certain skills and dispositions. Unfortunately, a distorted view of one's self is a hindrance to doing either.[10] One may see oneself already as supremely wise or adept at critical thinking. If one has such an inflated view of oneself, then the necessary desire for self-improvement is missing. To believe that one is already wise is just as harmful as believing that one is incapable of learning. Socrates constantly maintained that a necessary condition for honest inquiry and learning is the desire for or love of truth. Love of wisdom assumes that one desires to acquire the wisdom one lacks.

Unfortunately, many people have accepted the popular dictum, "I'm O.K.; you're O.K." While it was originally meant to express the truth that all people were individuals who deserved respect as persons, an uncritical interpretation of the dictum can result in smug self-satisfaction, the sort that undermines honest self-criticism and the desire for greater self-development. The fact is that while each person deserves respect as a person, no human is "O.K." in the sense of being beyond criticism. We could all become much better, both intellectually and ethically, than we are. When we mistakenly believe we are "O.K.," we tend to resent criticism and fail to strive for improvement.

When we have an inflated sense of self-worth, we also tend to believe that an idea is true simply because we, who are after all "O.K.," believe it. How could such an "O.K. person" be wrong? We fail to recognize that **the truth or falsity of an idea has nothing to do with the quality of the person who does or does not believe it.**

#3 Distorted views of truth and values

The naive "I'm O.K.; you're O.K." attitude prevails only in a society in which relativism is a popular attitude toward both truth and values. Only if there are no objective standards for judging the status of a belief or an action can we say that two opposing or contradictory belief systems are both "O.K." Of course, if there are *no* objective standards, then the critical evaluation of a person's belief, character, or action becomes impossible. But if no evaluation is possible, what meaning does the claim "I'm O.K." have? How does its meaning differ from the claim "I'm not O.K.?"

The problems with both epistemological and ethical relativism are numerous. One major problem with the epistemological relativism is that if the claim that all knowledge is relative were considered to be true, there could never be any evidence for that claim. This is because, if on the one hand, the evidence for relativism were considered "sound, objective evidence," then the claim that "the truth of all claims is relative" would be false, because the truth of at least some claims (those that provide evidence for relativism) would not be relative. On the other hand, if the evidence is not "sound, objective evidence," then we have no good reason to accept the relativists' position. So, either there is no evidence for relativism, or if such evidence exists, relativism is false.

Accepting the doctrine of ethical relativism is no less a hindrance to critical thinking. If one is an ethical relativist and believes there are no moral standards apart from either personal taste or group judgment, then one could never critically evaluate and pass moral judgment upon the behavior of other groups--no matter what they did. To pass judgment on other groups assumes that there are moral standards that transcend groups or cultures, an assumption the ethical relativist denies. Another consequence is that one could not believe in moral progress or regression--as that would assume some external standard by which we judged whether we were getting morally better or worse. In addition, a relativist could never give reasons for his or her ethical beliefs because giving reasons, such as some action or policy is good because it promotes human dignity and happiness, assumes the existence of some rationally defensible standard to which all reasonable persons can and should appeal to justify their behavior morally. The only response that the consistent cultural relativist can give about why some practice is right or wrong is, "It's right because my culture says it's right." To inquire further as to why the members of a culture think the practice is right or wrong is impossible. Such inquiry assumes there are reasons beyond the beliefs of the culture. And finally, one might point out that ethical relativism entails consequences that are inconsistent with how people in fact behave. We do judge others; we do believe in moral progress; we do try to give reasons for our judgments when they are questioned.

So, while ethical and epistemological relativism do allow one to adopt the "I'm O.K.; you're O.K." attitude of acceptance and non-judgment, there appear to be good reasons to reject these positions.

People often confuse the notions of relativism and pluralism. We live in a pluralistic society in which there are many groups that have different values, different ways of organizing their lives, and different cultural practices. Each group believes that its beliefs are true or at least are as reasonable as the alternatives. Insofar as these differences of opinions do not involve one group harming another, a pluralistic society is good. Pluralism leads to a marketplace of ideas and practices in which each group competes for the endorsement of its ideas by those who disagree. The dynamic environment of pluralism is conducive to the refinement and distillation of truth and is a necessary condition for critical thought. Pluralism is not, however, relativism. Relativism goes further and asserts that there are no objective truths and what is true or right is nothing but what each group or individual believes it to be. A relativist views critical thinking as either impossible or as a rhetorical game by which one group seeks to impose its ideas and values on another. However, the truth of a proposition has nothing to do with whether persons believe the proposition to be true or not: e.g., whether the earth is or is not very old is not dependent upon what anyone thinks. It either is or is not very old.

So, while we should be aware of and endorse the pluralistic nature of society, the existence of competing beliefs and values does not entail the relativistic position. Relativism makes all reasoned evaluation and judgment impossible; pluralism makes a reasoned approach to our differences essential. (For a more extended discussion of ethical relativism, see Appendix F: Critical Thinking and Values.)

#4 Love of simple answers

Another psychological tendency that hinders our ability to think critically is our love of simple "common sense" answers to complex questions. Throughout history, politicians who present the simplest, clearest answers to social problems, no matter how complex, are those who get the most votes. Politicians who admit that complex issues have complex causes and, hence, complex solutions tend to be less popular. Our desire for the simple is also present in our tendency to prefer the scientific laws that are simplest or the mathematical proofs that are the most elegant and involve the fewest steps. However, whether nature's laws are in fact simple or very complex has nothing to do with our preferences. They are as they are.

Simple answers or explanations are to be preferred as long as there are good reasons for accepting them. Simplicity, in itself, is not a good reason. Complex events especially social phenomena, usually have complex causes, and it is unwise to accept an explanation simply because it is uncomplicated and thus easy to understand.

#5 Fear of the unfamiliar

While we feel comfortable with familiar ideas, we are inclined to be less than enthusiastic when we encounter unfamiliar ideas since what is unfamiliar makes us feel ill at ease. As a result, we tend not to evaluate new ideas and theories fairly, because to do so would require becoming familiar with the unfamiliar.

Our love of the familiar impedes our intellectual growth. We fear venturing into new areas of thought and hence fail to make new connections and to evaluate what we already believe in light of new ideas and evidence. If out of fear of the unfamiliar we do not seek to understand new areas of study, we are barred from knowing whether those areas of study are worthy or not.

If we assume that most people naturally fear or feel uneasy when confronted with the unfamiliar, then one purpose of training in critical thinking must be to equip us to understand and evaluate that which is unfamiliar.

Exercise 2.5

1. In one or two sentences summarize each of the five hindrances to critical thinking. Give an example of each.

2. Imagine that you have a friend who is a relativist. Write a letter explaining why believing in relativism makes critical thinking difficult.

2.6 Summary and Conclusion

We should now have a clear idea of our objectives. We should also understand what skills and dispositions are essential for critical thinking. The following chapters will each deal with a different skill. One of the first things we must do is to learn to read critically in order to understand what is being claimed in each passage of a text. Unless we can do that, our critical or evaluative skills will be of no use. There is nothing more frustrating than carefully evaluating a position that in fact an author did not hold. In order to grasp what an author is saying in a text, we need some instruction in the art of summarizing the main ideas of each passage.

Second, we need instruction in logic. In this chapter, we have seen that critical thinking involves both evaluating positions and arguments and putting forth arguments to support one's own position. The study of logic teaches one to identify, evaluate, and formulate arguments. The formulation of arguments naturally leads to a third area of critical thinking which will be addressed in this text: writing expository papers. The latter part of the text will deal with this area.

Exercise 2.6

Critical Thinking Exercise

Instructions: All persons like to believe that the positions they accept are probably true and that those they reject are probably false. The following four questions ask you to reflect on how you decide (or how you ought to decide) if a claim or a position has been accepted or rejected for good or bad reasons.

In clear, grammatically-correct prose list as many answers to the following four questions as you can. For each answer give an example of the reason you cite.

I. What are some bad reasons for accepting a claim or position? For each reason give an example.

1.

Example:

2.

Example:

3.

Example:

II. What are some bad reasons for rejecting or seriously doubting a position or a claim? For each reason give an example.

1.

Example:

2.

Example:

3.

Example:

III. What are some good reasons for rejecting or seriously doubting a position or claim? For each reason give an example.

1.

Example:

2.

Example:

3.

Example:

IV. What are some good reasons for accepting a claim or position? For each reason give an example.

1.

Example:

2.

Example:

3.

Example:

Notes for Chapter Two

[1] This method of setting up rules to govern disputes was first suggested by Frans H. Van Eemeren and Rob Grootendorst in their article "Rules for Argumentation in Dialogues," *Argumentation* 2 (4), November 1988, pp. 499-510. What follows is a modification of their suggestions.

[2] The distinction between rhetoric and critical thinking (or honest inquiry) is brought out clearly in Plato's dialogue *Gorgias*. Gorgias teaches rhetoric which turns out to be merely how to argue so as to convince others of one's own positions. Plato's criticism was that such a practice had no concern for the truth or benefit of a position. This, he concluded, was a dangerous practice. He equated the rhetorician with the person skilled in cosmetics: a person who was only interested in appearances, with little concern for truth and honesty. *Rationalization* is a similar practice where we try to make our most irrational behavior appear reasonable to others.

[3] Robert Ennis has defined critical thinking as *"reasonable reflective thinking* that is focused on deciding what to *believe or do*" in "A Conception of Critical Thinking--With Some Curriculum Suggestions," *APA Newsletter on Teaching Philosophy*, Summer 1987, p. 1. Such a definition makes it clear that critical thinking should precede believing and doing.

[4] Richard Paul calls this tendency towards rationalizing one's own values while criticizing those that conflict with our own, "critical thinking in the weak sense."

[5] Martin Heidegger, *Being and Time*, trs. Macquarrie and Robinson (New York: Harper and Row, 1962), p. 105.

[6] The following profile is a composite put together from the writings of various persons involved in the critical thinking movement: Robert Ennis, Ralph Johnson, Richard Paul, and Harvey Siegel. Most of the material has been circulated in the form of handouts at the yearly International Conference on Critical Thinking and Moral Critique at Sonoma State University, Rohnert Park, California. Richard Paul organizes the conferences. The Ennis material is included in his article "A Conception of Critical Thinking," op. cit.

[7] Harvey Siegel makes this point in Chapter One of his book *Educating Reason: Rationality, Critical Thinking, and Education* (New York: Routledge, 1988).

[8] This definition includes Harvey Siegel's emphasis upon dispositions, Robert Ennis' definition cited in note #3, and Connie Missimer's positions. Missimer's book Good Arguments (Englewood Cliffs: Prentice Hall, 1986) emphasizes this approach.

[9] This argument is expressed more fully in J.S. Mill's *On Liberty*, Chapter Two.

[10] This problem was first suggested by Vincent Ruggerio, author of numerous texts on critical thinking, including *Beyond Feelings* and *Enter the Dialogue*.

Chapter Three

Understanding What You Read

> [Our] method consists entirely in the order and disposition of the objects towards which our mental vision must be directed if we would find out any truth. We shall comply with it exactly if we reduce involved and obscure propositions step by step to those that are simpler....
>
> Descartes, *Rules for the Direction of the Mind*

3.1 The Uses of Language

In our profile of a critical thinker, we saw that the first skill needed to evaluate a position was the ability to clarify the ideas presented in a text. Only when we understand what claims are being made and the reasons given in their support can we hope to evaluate honestly the reasonableness of the position.

Attempts to understand the meaning of a passage are complicated by the fact that communication itself is often a complex phenomenon. One reason for the complexity is that language, like thinking, has many uses. We often use language to entertain or amuse each other, as when we compose limericks or make jokes. Sometimes we use language to evoke a particular emotional response or feeling from our audience. Able public speakers tend to be very good at this use of language. Sometimes we use language to describe situations or convey information, as when a newscaster reports how the stock market did on a given day. Sometimes we use language to give instructions, as when a counselor instructs a student on how to develop better reading skills.

It is sometimes difficult to understand and evaluate a claim because it mixes factual description with emotive language. For example, a father might describe graphically to his child the injustices done to women and minorities not only to convey this information but also to arouse certain emotions in the child; the father hopes, given the information and the emotion, that the child will be inclined to be critical of discrimination and opposed to those who practice it.

When factual claims are made in emotional terms, the communication has a kind of "surplus meaning." On one hand, the facts are stated, but in addition, a certain judgment about the facts is implied, i.e., an attitude of approval or disapproval. It is important for critical thinkers to be aware of the emotive use of language because in most cases it is precisely the approval or disapproval of the position that is at issue. For example, if a female single parent is described as "a liberated woman," something more than her marital or parental status is implied. If a person who is pro-choice on the abortion issue is described as "one who supports killing babies," a judgment concerning the person's position is implied. If a person who supports social programs for poor children is described as "one who endorses a welfare state," a judgment about the position and the person holding it is implied. Whenever claims about which we would like to think critically are made in emotional terms, we must be able to separate what is being claimed from the emotions they raise; only then can we adequately evaluate their reasonableness.

Emotionally charged language can be an effective tool in convincing people of a position. We should recognize that because we live in a "particular cave" with its specific education and set of values, there are certain words and ideas that will automatically create strong emotional responses in us and our fellow "cave dwellers." Such words and phrases as *freedom*, *fair competition*, *Christian*, *open-minded*, *capitalistic*, *constitutional*, and *democracy* have strong positive connotations for many Americans. Words such as *dictatorship*, *socialism*, *atheist*, *communist*, *radical*, and *extremist* all have negative connotations for the same people. We should also recognize that people who do not share our cultural background do not have the same feelings associated with these terms. For example, a British worker who has been made to work long hours for low wages will not respond positively to the word "capitalism." A Buddhist will respond to the phrase "Christian values" the same way a Christian would to the phrase "Buddhist values." Hence, for rhetorical purposes, the effectiveness of specific emotive language depends on the background of the audience. Phrases that create positive emotional responses in some may create negative responses or none at all in people with different cultural backgrounds. The fact that we all bring specific backgrounds to the words we hear and read is especially evident when factual claims are couched in emotive language.

Another way of using language that can conceal or obscure the true meaning of a claim is the use of euphemism. When one describes a situation euphemistically, one tries to make the situation sound better than it is. For example, we might describe those people who live in poverty as "low income," a prison as "a correctional facility," our soldiers in foreign countries as "military advisors," arms to foreign countries as "international security assistance," and bombing as "air assistance." Euphemism can be an effective rhetorical device, but, when a critical evaluation of a situation is called for, it should not be used to conceal or distort the truth.

As critical thinkers and effective writers, we should understand that euphemism and emotive language are effective rhetorical tools, but in those cases where argument is needed they are not substitutes for careful analysis and critical thought. Emotive language is a way to convince people of a position by appealing to their feelings and emotions, but such emotive responses may not be a function of evidence or reasoned assent. Euphemism tends to disarm our critical faculties by describing potentially troublesome situations in language that obfuscates the issues. Through the use of emotive language in describing the situation of a female single parent, the facts can be conveyed in such a way that strong negative or positive emotions are aroused. Such initial responses to a position make an honest evaluation difficult.

Again, while euphemistic and emotive language are effective rhetorical tools, as critical thinkers we should take care to separate the claims being made from the emotions they arouse. We should realize that our emotional responses to a position, no matter how strong, may be independent of whether or not the position is true or false or good or bad. We can only hope that those rhetoricians who skillfully play on the strings of our emotions also intend to convey the truth. More importantly, we can also hope that as critical thinkers we have developed the virtue of "rational passions." Such rational passions would incline us to respond in a positive emotional manner to well-reasoned arguments or to persons who exhibit intellectual virtue.[1] Such rational passions would incline us to become outraged when rhetoricians consciously distort facts by using emotive and euphemistic language on an unsuspecting audience. At the same time, the persons equipped with "rational passions" would be inclined to endorse reasoned argument and claims grounded on strong evidence. While such rational passions are helpful in identifying instances where critical thinking is needed, they are no substitute for analysis and reasoned judgment. Hence, like all judgments based on intuitive, immediate, or emotional responses, these too deserve careful treatment.

The use of emotive language, with its immediate appeal and subjective force, is not always bad. It can be very effective in moving people towards accepting positions. Its use is bad only when the situation is one in which factual claims are being made and people should be thinking critically about the reasonableness of the claims, i.e., when emotive language is substituted for argument. In literature and art, however, emotive language is essential. What would poetry be if all uses of emotive language were eliminated?

Exercise 3.1 Identifying Emotive Language

A. In the following passages, identify the inappropriate emotive or euphemistic language; then re-write the passages replacing the inappropriate terms.

1. In spite of his doctor's advice, Harold developed a rather mature figure as he passed the age of 40.
2. The freedom fighters of Nicaragua should be supported by anyone who loves liberty.
3. Sanitation engineers are some of the lowest paid professionals in our culture. They obviously need a raise.
4. To oppose the position of the bishop is nothing less than heresy. Heresy is against the will of God!
5. Providing medical care for the elderly is nothing more than socialized medicine. Even the elderly are opposed to socialism.
6. Providing life-long room and board for a convicted murderer is hardly sufficient punishment. We should support capital punishment.

B. Rewrite the following in either emotional or euphemistic language.

1. Aunt Gertrude died of lung cancer last month.
2. On the average, young people watch television seven hours each day.
3. People of lower income tend to vote for candidates who are Democrats.

3.2 Summarizing

From the perspective of critical thinking, we are most concerned with language when it is used to make claims that are intended to be either true or false or when reasons and arguments are provided in support of those claims. While it is easy to know how strongly we "feel" initially about a claim, it is not so easy to understand and critically evaluate the reasonableness of claims.

In one of his early works, the Austrian philosopher Ludwig Wittgenstein said, "Everything that can be thought can be thought clearly. Everything that can be put into words can be put clearly."[2] By now it should be obvious that one of the reasons for studying reasoning is to enable us to think clearly and carefully about what we and others believe, say, and do. It is self-evident that prior to any critical evaluation of a claim or position we must first understand what is being claimed. Only then can we go on to evaluate the reasonableness of the claim, i.e., the strength of the reasons and arguments given in its support. Unless participants in a dispute can agree about the nature of the claims and the reasons given in their support, it will be impossible to discern which position is most reasonable. Good reasons for one interpretation will not be good reasons for some other.

Reading is a complex process. Unfortunately, it is not enough to understand the meaning of the terms in a sentence. The meaning of terms is ambiguous because understanding is often a function of the prior understanding and background knowledge of the reader. For example, the sentence "Mary had a little lamb" has a variety of meanings. To have a little lamb may mean "to give birth," "to eat," or "to own." The meaning of the sentence, by itself, is indeterminate. Unless one understands the context in which the sentence was uttered or written, it is impossible to know what is intended. The context needed for understanding includes the cultural situation of the speaker, the speaker's understanding of the audience, and the intentions of the speaker. Obviously, such demands make understanding many historical texts difficult, as the ongoing debates over the meaning of the U.S. Constitution indicate.

With most written communication, it is often difficult to understand what is being claimed in complex passages because the authors are not present to answer questions. Often, when reading classic texts, we are faced with the challenge of understanding and evaluating claims that are made in complicated prose, written for an audience with a history, value system, and conceptual framework quite different from our own, and with a purpose that is never clearly stated. In such cases it is advisable to consult secondary sources in order to obtain the needed knowledge.

Once we have a fair understanding of the context of a passage, one strategy for understanding what is being claimed is to look up the meaning of the significant terms in a dictionary. Not all dictionaries are especially helpful. When reading texts from specialized disciplines, it is essential to look up the words in dictionaries that are discipline specific, e.g., The Dictionary of Psychology. One of the primary reasons that we have difficulty in understanding passages in college-level readings is that we are unwilling to look up terms we do not understand.

Beyond understanding the meaning of the terms, we must also understand the meaning of each sentence. For problematic sentences, we should ask what is being said about what. What is the subject? What is the predicate? While these sound like questions too simple for college students, identifying the subject and predicate of a difficult sentence can be very helpful in the search for understanding. Having identified the subject and the predicate, if you remain unsure whether you understand the claim, one strategy is to ask what evidence would count either for or against the truth of the claim. For example, if someone claimed that there was an elephant in the corner of the room, we know that we understand the claim because we know what might count as evidence for or against the claim; i.e., we know what an elephant is, and we might then look to see if there is a large gray mammal with a long trunk in the corner of the room. On the other hand, if we can not imagine what evidence might count either for or against a position, this may be an indication that the claim itself is problematic because there are no obvious truth conditions that would verify or falsify the claim.

We should also be aware that it is sometimes difficult to understand what we read because the author assumes that the reader has specific background knowledge needed for understanding. Meanings are often confusing or hard to grasp because we do not have the general knowledge needed to assimilate what is being claimed. In such cases, it is essential that we acquire the needed background knowledge. This is often provided by a professor's lecture, but it can also be acquired through reading commentaries or secondary sources that explain complicated texts.

After we understand the sentences of a passage, if we decide that the passage is argumentative, we can then develop a simple procedure for identifying, analyzing, and evaluating its arguments. Techniques for argument evaluation will be the subject of Chapters Four, Five, and Six.

Unfortunately, in ordinary discourse, people are often careless about how they use language. Often when we construct arguments for a position, we imbed the argument in a morass of extraneous verbiage. (We should recall from the Relevance Principle that claims are considered extraneous or irrelevant if their truth or falsity has no bearing on the probable truth or falsity of the claim for which they are intended as support.) When we do so, it is sometimes difficult to identify the position and the reasons (if any) given in its support. What the reader must do in such cases is to summarize the main ideas of the material, leaving aside all that is not necessary to make sense of what is being claimed and the reasons supporting the claim. To summarize a passage is to restate the essential part of each passage in clear, familiar language. In many ways, summarizing the main ideas is like translation. It is a process which takes a good deal of careful attention and, like all skills, practice. But the rewards in terms of understanding are immense. A good summary of an argumentative text would lay out the premises and conclusions clearly so that one could easily understand and evaluate the strength of the position.

After doing a paragraph-by-paragraph summary of the main ideas, one can see more clearly the overall form of the author's argument. It is easier to see what supports what and what material may be omitted. An effective method for understanding the structure of a text is to read a paragraph through and then jot down the main claims in the margin of the text. After we have completed this task, the general structure of the text should be readily apparent. These comments in the margins should allow us to construct an outline of the major arguments or developments in the work.

How, some may ask, are we to identify the main ideas in a piece of writing? The main idea is the one which most other sentences either explain or support. It may occur anywhere in the paragraph. Frequently, however, the main idea is stated first, and the rest of the paragraph explains or clarifies it. Explanation and clarification take the form of defining the key terms, restating the ideas in simpler language, or providing examples of the idea. After the main idea has been sufficiently explained, authors usually provide reasons to support their position. Sometimes, however, the main idea is stated last in the form of a conclusion to an argument. Because this is also a common practice, one must read the entire paragraph or passage before deciding what the main idea is and what evidence is offered in its support.

Not all writers form perfect paragraphs or passages with only one idea. Sometimes there are more than one. Again, it is only through careful reading and much practice that we can come to understand what the main ideas are. But unless we can understand what is being claimed in a piece of writing, it will be impossible to evaluate fairly the position in question.

Reading requires careful attention and sufficient background knowledge. Evaluation of what we read requires knowledge of argumentation that far exceeds the natural intuitions of most. What we need to do is practice and admit that understanding a text is not an easy task, but for great texts, the rewards for such efforts are sufficiently great to warrant the work.

Exercise 3.2 Summarizing

In clear, grammatically-correct prose, summarize the main ideas in each paragraph of the following selections. Try to state the sentences simply and in your own words. If there are reasons given to support the main ideas, state them also. For most paragraphs, two or three sentences will be sufficient.

1. There is no more inward value in the greatest emperor than in the meanest of his subjects. His body is composed of the same substance, the same parts, and with the same, or greater, infirmities. His education is generally worse by flattery, idleness, and luxury, and the evil dispositions that early power is apt to give. It is therefore against common sense that his private personal interest, or pleasure, should be put in the balance with the safety of millions, every one of which is his equal by nature, equal in the sight of God, equally capable of salvation; and it is for their sakes, not his own, that he is entrusted with the government over them.
   Jonathan Swift, Sermon, 1725

2. A society in which each is willing to surrender only that for which he can see a personal equivalent is not a society at all; it is a group already in the process of dissolution, and no one need concern himself to stay its inevitable end; it would be a hard choice between it and a totalitarian society. No Utopia, nothing but Bedlam, will automatically emerge from a regime of unbridled individualism, be it ever so rugged.
   Judge Learned Hand, *Time*, 1954

3. This, then, is held to be the duty of the man of wealth: First, to set an example of modest, unostentatious living, shunning display or extravagance; to provide modestly for the legitimate wants of those dependent upon him; and after doing so consider all surplus revenues which come to him simply as trust funds, which he is called upon to administer, and strictly bound as a matter of duty to administer in a manner which, in his judgment, is best calculated to produce the most beneficial results for the community--the man of wealth thus becoming the mere agent and trustee for his poorer brethren, bringing to their service his superior wisdom, experience, and ability to administer, doing for them better than they could or would do for themselves.
   Andrew W. Carnegie, *The Gospel of Wealth*, 1889

4. Virtue and happiness together constitute the possession of the supreme good in a person, and the distribution of happiness in exact proportion to morality (which is the worth of a person and his worthiness to be happy) constitutes the supreme good of a possible ideal world.

Immanuel Kant, *Critique of Practical Reason*

5. God offers every mind its choice between truth and repose. Take which you please; you can never have both. Between these, as a pendulum, man oscillates. He in whom the love of repose predominates will accept the first creed, the first philosophy, the first political party he meets--most likely his father's. He gets rest, commodities, and reputation; but shuts the door to truth. He in whom the love of truth predominates will keep himself aloof from all moorings, and afloat. He will abstain from dogmatism, and recognize all the opposite negations between which, as walls, his being is swung.

Ralph Waldo Emerson, *Intellect*

6. Ah, love, let us be true
To one another! for the world, which seems
To lie before us like a land of dreams,
So various, so beautiful, so new,
Hath really neither joy, nor love, nor light,
Nor certitude, nor peace, nor help for pain;
And we are here on a darkling plain
Swept with confused alarms of struggle and flight,
Where ignorant armies clash by night.

Matthew Arnold, "Dover Beach"

7. Get all the gold and silver that you can,
Satisfy ambition, animate
The trivial days and ram them with the sun,
And yet upon these maxims meditate:
All women dote upon an idle man
Although their children need a rich estate;
No man has ever lived that had enough
Of children's gratitude or woman's love.

William Butler Yeats, "Vacillation"

8. If I steal money from any person, there may be no harm done...; he may not feel the loss, or it may prevent him from using the money badly. But I cannot help doing this great wrong towards MAN, that I make myself dishonest. What

hurts society is not that it should lose its property, but that it should become a den of thieves; for then it must cease to be society. This is why we ought not to do evil that good may come; for at any rate this great evil has come, that we have done evil and are made wicked thereby....

In like manner, if I let myself believe anything on insufficient evidence, there may be no great harm done by the mere belief; it may be true after all.... But I cannot help doing this great wrong towards Man, that I make myself credulous. The danger to society is not merely that it should believe wrong things, though that is great enough; but that it should become credulous.

W. K. Clifford, "The Ethics of Belief"

9. But the function of dress as an evidence of ability to pay does not end with simply showing that the wearer consumes valuable goods in excess of what is required for physical comfort. Simple conspicuous waste of goods is effective and gratifying as far as it goes; it is good *prima facie* evidence of pecuniary success, and consequently *prima facie* evidence of social worth. But dress has subtler and more far-reaching possibilities than this crude, first-hand evidence of wasteful consumption only. If, in addition to showing that the wearer can afford to consume freely and uneconomically, it can also be shown in the same stroke that he or she is not under the necessity of earning a livelihood, the evidence of social worth is enhanced in a very considerable degree. Our dress, therefore, in order to serve its purpose effectually, should not only be expensive, but it should also make plain to all observers that the wearer is not engaged in any kind of productive labor. In the evolutionary process by which our system of dress has been elaborated into its present admirably perfect adaptation to its purpose, this subsidiary line of evidence has received due attention. A detailed examination of what passes in popular apprehension for elegant apparel will show that it is contrived at every point to convey the impression that the wearer does not habitually put forth any useful effort. It goes without saying that no apparel can be considered elegant, or even decent, if it shows the effect of manual labor on the part of the wearer, in the way of soil or wear. The pleasing effect of neat and spotless garments is chiefly, if not altogether, due to their carrying the suggestion of leisure--exemption from personal contact with industrial processes of any kind. Much of the charm that invests the patent-leather shoe, the stainless linen, the lustrous cylindrical hat, and the walking-stick, which so greatly enhance the native dignity of a gentleman, comes of their pointedly suggesting that the wearer cannot when so attired bear a hand in any employment that is directly and immediately of any human use. Elegant dress serves its purpose of elegance not only in that it is expensive, but also because it is the insignia of leisure. It not only shows that the wearer is able to consume a relatively large value, but it argues at the same time that he consumes without producing.

Thorstein Veblen, *The Theory of the Leisure Class*

10. The Tempter all impassion'd thus began.
O Sacred, Wise, and Wisdom-giving Plant,
Mother of Science, Now I feel thy Power
Within me clear, not only to discern
Things in their Causes, but to trace the ways
Of highest agents, deem'd however wise.
Queen of this Universe, do not believe
Those rigid threats of Death; ye shall not Die:
How should ye? by the Fruit? it gives you Life
To Knowledge: By the Threat'ner? look on mee,
Mee who have touch'd and tasted, yet both live,
And life more perfect have attain'd than Fate
Meant mee, by vent'ring higher than my Lot.
Shall that be shut to Man, which to the Beast
Is open? or will God incense his ire
For such a petty Trespass, and not praise
Rather your dauntless virtue, whom the pain
Of Death denounc't, whatever thing Death be,
Deterr'd not from achieving what might lead
To happier life, knowledge of Good and Evil;
Of good, how just? of evil, if what is evil
Be real, why not known, since easier shunn'd?
God therefore cannot hurt ye, and be just;
Not just, not God; not fear'd then, nor obey'd:
Your fear itself of Death removes the fear.
Why then was this forbid? Why but to awe,
Why but to keep ye low and ignorant,
His worshippers; he knows that in the day
We Eat thereof, your Eyes that seem so clear,
Yet are but dim, shall perfectly be then
Op'n'd and clear'd, and ye shall be as Gods,
Knowing both Good and Evil as they know.
That ye should be as Gods, since I as Man,
Internal Man, is but proportion meet,
I of brute human, ye of human Gods.
So ye shall die perhaps, by putting off
Human, to put on Gods, death to be wisht,
Though threat'n'd, which no worse than this can bring.
And what are Gods that Man may not become
As they, participating God-like food?
The Gods are first, and that advantage use
On our belief, that all from them proceeds;
I question it, for this fair earth I see,
Warm'd by the Sun, producing every kind,
Then nothing: If they all things, who enclos'd
Knowledge of Good and Evil in this Tree,
That who so eats thereof, forthwith attains
Wisdom without their leave? and wherein lies

Th' offense, that Man should thus attain to know?
What can your knowledge hurt him, or this Tree
Impart against his will if all be his?
Or is it envy, and can envy dwell
In heav'nly breasts? these, these and many more
Causes import your need of this fair Fruit.
Goddess humane, reach then, and freely taste.

John Milton, *Paradise Lost, Book IX* 679-732

11. What would this man? Now upward will he soar,
And little less than angel, would be more;
Now looking downwards, just as grieved appears,
To want the strength of bulls, the fur of bears.
Made for his use all creatures if he call,
Say what their use, had he the powers of all?
Nature to these, without profusion, kind
The proper organs, proper powers assigned;
Each seeming want compensated of course,
Here with degrees of swiftness, there of force;
All in exact proportion to the state;
Nothing to add, and nothing to abate.
Each beast, each insect, happy in its own:
Is Heaven unkind to man, and man alone?
Shall he alone, whom rational we call,
Be pleased with nothing, if not blessed with all?

Alexander Pope, *Essay on Man*

12. Know then thyself, presume not God to scan,
The proper study of mankind is man.
Placed on this isthmus of a middle state,
A being darkly wise, and rudely great:
With too much knowledge for the sceptic side,
With too much weakness for the stoic's pride,
He hangs between; in doubt to act, or rest;
In doubt to deem himself a god, or beast;
In doubt his mind or body to prefer;
Born but to die, and reasoning but to err;
Alike in ignorance, his reason such,
Whether he thinks too little, or too much:
Chaos of thought and passion, all confused;
Still by himself abused, or disabused;
Created half to rise, and half to fall;
Great lord of all things, yet a prey to all;

Sole judge of truth, in endless error hurled:
The glory, jest, and riddle of the world!

Alexander Pope, *Essay on Man*

13. According to one mode of regarding those two classes of mental action which are called reason and imagination, the former may be considered as mind contemplating the relations borne by one thought to another, however produced; and the latter, as mind acting upon those thoughts so as to colour them with its own light, and composing from them, as from elements, other thoughts, each containing within itself the principle of its own integrity. The one [imagination] is the to poiein, or the principle of synthesis, and has for its objects those forms which are common to universal nature and existence itself; the other [reason] is the to logizein, or principle of analysis, and its action regards the relations of things, simply as relations; considering thoughts, not in their integral unity, but as the algebraical representations which conduct to certain general results. Reason is the enumeration of quantities already known; imagination is the perception of the value of those quantities, both separately and as a whole. Reason is to Imagination as the instrument to the agent, as the body to the spirit, as the shadow to the substance.

Percy Bysshe Shelley, *A Defence of Poetry*

14. Suppose it were perfectly certain that the life and fortune of every one of us would, one day or other, depend upon his winning or losing a game of chess. Don't you think that we should all consider it to be a primary duty to learn at least the names and the moves of the pieces; to have a notion of a gambit, and a keen eye for all the means of giving and getting out of check? Do you not think that we should look with a disapprobation amounting to scorn, upon the father who allowed his son, or the state which allowed its members, to grow up without knowing a pawn from a knight?

Yet it is a very plain and elementary truth that the life, the fortune, and the happiness of every one of us, and, more or less, of those who are connected with us, do depend upon our knowing something of the rules of a game infinitely more difficult and complicated than chess. It is a game which has been played for untold ages, every man and woman of us being one of the two players in a game of his or her own. The chessboard is the world, the pieces are the phenomena of the universe, the rules of the game are what we call the laws of Nature. The player on the other side is hidden from us. We know that his play is always fair, just, and patient. But also we know, to our cost, that he never overlooks a mistake, or makes the smallest allowance for ignorance. To the man who plays well, the highest stakes are paid, with that sort of overflowing generosity with which the strong shows delight in strength. And one who plays ill is checkmated--without haste, but without remorse.

My metaphor will remind some of you of the famous picture in which Retzsch has depicted Satan playing at chess with man for his soul. Substitute for the mocking fiend in that picture a calm, strong angel who is playing for love, as we say, and would rather lose than win--and I should accept it as an image of human life.

Well, what I mean by Education is learning the rules of this mighty game. In other words, education is the instruction of the intellect in the laws of Nature, under which name I include not merely things and their forces, but men and their ways; and the fashioning of the affections and of the will into an earnest and loving desire to move in harmony with those laws. For me, education means neither more nor less than this. Anything which professes to call itself education must be tried by this standard, and if it fails to stand the test, I will not call it education, whatever may be the force of authority, or of numbers, upon the other side...

That man, I think, has had a liberal education who has been so trained in youth that his body is the ready servant of his will, and does with ease and pleasure all the work that, as a mechanism, it is capable of; whose intellect is a clear, cold, logic engine, with all its parts of equal strength, and in smooth working order; ready, like a steam engine, to be turned to any kind of work, and spin the gossamers as well as forge the anchors of the mind; whose mind is stored with a knowledge of the great and fundamental truths of Nature and of the laws of her operations; one who, no stunted ascetic, is full of life and fire, but whose passions are trained to come to heel by a vigorous will, the servant of a tender conscience, who has learned to love all beauty, whether of Nature or of art, to hate all vileness, and to respect others as himself.

Such a one and no other, I conceive, has had a liberal education; for he is, as completely as a man can be, in harmony with Nature. He will make the best of her, and she of him. They will get on together rarely; she as his ever beneficent mother; he as her mouthpiece, her conscious self, her minister and interpreter.

Thomas Henry Huxley, "A Liberal Education"

15. Men in society are undoubtedly subject to the cosmic process. As among other animals, multiplication goes on without cessation, and involves severe competition for the means of support. The struggle for existence tends to eliminate those less fitted to adapt themselves to the circumstances of their existence. The strongest, the most self-assertive, tend to tread down the weaker. But the influence of the cosmic process on the evolution of society is the greater the more rudimentary its civilization. Social progress means a checking of the cosmic process at every step and the substitution for it of another, which may be called the ethical process; the end of which is not the survival of those who may happen to be the fittest, in respect of the whole of the conditions which obtain, but of those who are ethically the best.

As I have already urged, the practice of that which is ethically best -- what we call goodness or virtue -- involves a course of conduct which, in all respects, is opposed to that which leads to success in the cosmic struggle for existence. In place of ruthless self-assertion it demands self- restraint; in place of thrusting aside, or treading down, all competitors, it requires that the individual shall not merely respect, but shall help his fellows; its influence is directed, not so much to the survival of the fittest, as to the fitting of as many as possible to survive. It repudiates the gladiatorial theory of existence. It demands that each man who enters into the enjoyment of the advantages of a polity shall be mindful of his debt to those who have laboriously constructed it; and shall take heed that no act of his weakens the fabric in which he has been permitted to live. Laws and moral precepts are directed to the end of curbing the cosmic process and reminding the individual of his duty to the community, to the protection and influence of which he owes, if not existence itself, at least the life of something better than a brutal savage.

Thomas Henry Huxley, "Evolution and Ethics

16. So far as I know, Miss Hannah Arendt was the first person to define the essential difference between work and labor. To be happy, a man must feel, firstly, free and, secondly, important. He cannot be really happy if he is compelled by society to do what he does not enjoy doing, or if what he enjoys doing is ignored by society as of no value or importance. In a society where slavery in the strict sense has been abolished, the sign that what a man does is of social value is that he is paid money to do it, but a laborer today can rightly be called a wage slave. A man is a laborer if the job society offers him is of no interest to himself but he is compelled to take it by the necessity of earning a living and supporting his family.

The antithesis to labor is play. When we play a game, we enjoy what we are doing, otherwise we should not play it, but it is a purely private activity; society could not care less whether we play it or not.

Between labor and play stands work. A man is a worker if he is personally interested in the job which society pays him to do; what from the point of view of society is necessary labor is from his own point of view voluntary play. Whether a job is to be classified as labor or work depends, not on the job itself, but on the tastes of the individual who undertakes it. The difference does not, for example, coincide with the difference between a manual and a mental job; a gardener or a cobbler may be a worker, a bank clerk a laborer. Which a man is can be seen from his attitude toward leisure. To a worker, leisure means simply the hours he needs to relax and rest in order to work efficiently. He is therefore more likely to take too little leisure than too much; workers die of coronaries and forget their wives' birthdays. To the laborer, on the other hand, leisure means freedom from compulsion, so that it is natural for him to imagine that the fewer hours he has to spend laboring, and the more hours he is free to play, the better.

What percentage of the population in a modern technological society are, like myself, in the fortunate position of being workers? At a guess I would say sixteen percent, and I do not think that figure is likely to get bigger in the future.

Technology and the division of labor have done two things: by eliminating in many fields the need for special strength or skill; they have made a very large number of paid occupations which formerly were enjoyable work into boring labor, and by increasing productivity they have reduced the number of necessary laboring hours. It is already possible to imagine a society in which the majority of the population, that is to say, its laborers, will have almost as much leisure as in earlier times was enjoyed by the aristocracy. When one recalls how aristocracies in the past actually behaved, the prospect is not cheerful. Indeed, the problem of dealing with boredom may be even more difficult for such a future mass society than it was for aristocracies. The latter, for example, ritualized their time: there was a season to shoot grouse, a season to spend in town, etc. The masses are more likely to replace an unchanging ritual by fashion which it will be in the economic interest of certain people to change as often as possible. Again, the masses cannot go in for hunting, for very soon there would be no animals left to hunt. For other aristocratic amusements like gambling, dueling, and warfare, it may be only too easy to find equivalents in dangerous driving, drug-taking, and senseless acts of violence. Workers seldom commit acts of violence, because they can put their aggression into their work, be it physical like the work of a smith, or mental like the work of a scientist or an artist. The role of aggression in mental work is aptly expressed by the phrase "getting one's teeth into a problem."

W. H. Auden, "Work, Labor, and Play"

17. Television in America, it would appear, is the soma of Huxley's *Brave New World*. But let me hasten to say that America's immersion in television is not to be taken as an attempt by a malevolent government or an avaricious corporate state to employ the age-old trick of distracting the masses with circuses. The problem is more serious than that, and far from being age-old. The problem is not that TV presents the masses with entertaining subject matter, but that television presents all subject matter as entertaining. What is dangerous about television is not its junk. Every culture can absorb a fair amount of junk, and, in any case, we do not judge a culture by its junk but by how it conducts its serious public business. What is happening in America is that television is transforming all serious public business into junk.

As our politics, our news, our religion, our education, and our commerce are less and less given expression in the form of printed words or even oratory, they are rapidly being reshaped and staged to suit the requirements of television. And because television is a visual medium; because it does its talking in pictures not words; because its images are in color and are most pleasurably apprehended when they are fast-moving and dynamic; because television demands an immediate and emotional response; because television is nothing at all like a pamphlet, a newspaper, or a book; because of all this and more, all discourse on television must take the form of an entertainment. Television has little tolerance for arguments, hypotheses, reasons, explanations, or any of the instruments of abstract, expositional thought. What television mostly demands is a performing art. Thinking is not a performing art. Showing is. And so what can be shown rather than what can be thought becomes the stuff of our public consciousness. In all arenas of public business, the image now replaces the word as the basic unit of discourse. As a consequence, television makes the metaphor of the marketplace of ideas obsolete. It creates a new metaphor: the marketplace of images.

Should you need a precise example of what this means, then consider the following: In America, circa 1984, a fat person cannot be elected to high political office. With your indulgence, I shall repeat this, because it captures the sense of the great Huxleyan transformation now taking place: In America, a fat person cannot be elected to high political office. A fat person makes an unpleasant image on television, and such an image easily overwhelms whatever profundities may issue forth from its mouth. If you have not heard any interesting ideas from American political leaders, it is not, I assure you, that they have none. It is because ideas are irrelevant to political success. In the Age of Television, people do not so much agree or disagree with politicians as they like or dislike them, for the image is not susceptible to verification or refutation, only to acceptance or rejection. In 1984, politics in America is not the Federalist Papers. It is not the Lincoln-Douglas Debates. It is not even Roosevelt's fireside chats. Politics is good looks and amiability. It is fast-moving imagery. A quick tempo, a good show, celebrities. Because of this it is even possible that some day a Hollywood movie actor may become President of the United States.

What is true of politics is equally true of news, which is transmitted to Americans through the device widely known as a "TV news show." Our newscasters, sometimes referred to a "talking hair-dos," comprise the handsomest class of people in America. Their shows are always introduced and concluded with music. While on camera, they talk to each other with chatty informality. Each of the stories they tell us rarely occupies more than forty-five seconds of our time. And in all cases, coherence and continuity are sacrificed in favor of visual interest. A TV news show is only marginally concerned with public information. What is important is its tempo, the celebrity of its performers, the pleasant familiarity of its ambience. A TV news show is precisely what its name implies: A show is an entertainment, a world of artifice, carefully staged to produce a particular series of effects so that the audience is left laughing or crying or stupefied. And that is why each evening at the conclusion of a news show, the newscaster invites us to "join" him or her tomorrow. One would think that thirty minutes of fragmented images of disorder and sorrow would provide enough anxiety for a month of sleepless nights. Not so. We join them tomorrow because we know a good show when we see one.

And that is exactly why so many Americans now prefer to get their religious instruction from television rather than church. Church is apt to provide congregants with a serious and austere experience; in any case, not a very amusing one. But television makes religion fun. Billy Graham, Oral Roberts, and Robert Schuller are only among the more entertaining of a coven of preachers who do religion regularly on television. Surrounded by singers, celebrities, floral displays, sparkling fountains, exotic locales, and exceedingly handsome people, these evangelists offer a religion that is a simplistic and theatrical as any Las Vegas stage show. No dogma, terminology, logic, ritual, doctrines, or traditions are called upon to burden the minds of viewers, who are required to respond only to the image of the preacher, to whom God, Himself, must take second billing. For God does not play well on television. In an imagistic medium God is scarcely present; only the relentless and charismatic image of a messenger who, to gain attention and large audiences, turns theology into a vaudeville act.

* * *

This shift in the form and content of public discourse is not only manifested in what is on television but also in what is off television. As TV moves typography to the edges of our culture and takes its place at the center, the television show becomes our most compelling model and metaphor of all communication. How TV stages the world becomes our idea of how the world is properly to be staged. Our newspapers, increasingly, are designed to give readers the feeling they are watching television. Indeed, America's newest national daily, *USA Today*, is sold on the streets in receptacles that look like television screens. Our teachers have increased the visual stimulation of their lessons, and strive to make their classrooms even more entertaining than "Sesame Street." In case you have not heard the news, I fear I must tell you that the Philadelphia public schools have embarked on an experiment in which children will have their curriculum sung to them to the rhythms of rock music. Those ministers who are confined to non-electronic, traditional pulpits are often driven to adopting a show business style to prove, as it were, that one does not have to be serious to be holy. Indeed, some wish to prove that one does not have to be holy at all, as for example, Father John J. O'Connor, who put on a New York Yankees baseball cap in mugging his way through his installation as Archbishop of the Archdiocese of New York. Our universities eagerly award honorary degrees to television and movie stars, some of whom are asked to address the graduates at commencement exercises on subjects about which neither they nor the graduates know anything whatsoever. It is of no matter. In a culture in which one becomes a celebrity by merely appearing on television, the distinction between entertainment and anything else becomes odious.

* * *

That all the world is a stage is hardly an unfamiliar thought. But that all the world is a TV situation comedy has come as quite a surprise--except to Aldous Huxley. We must, in any case, make no mistake about it. Television is not merely an entertainment medium. It is a philosophy of discourse, every bit as capable of altering a culture as was the printing press. Among other things, the printed word created the modern idea of prose, and invested exposition with unprecedented authority as a means of conducting public affairs. Television disdains exposition, which is serious, sequential, rational, and complex. It offers instead a mode of discourse in which everything is accessible, simplistic, concrete, and above all, entertaining. As a result, America is the world's first culture in jeopardy of amusing itself to death.

Neil Postman, *Amusing Ourselves to Death*

18. That which exists for me through the medium of money, that which I can pay for (i.e. which money can buy), that I am, the possessor of the money. My own power is as great as the power of money. The properties of money are my own (the possessor's) properties and faculties. What I am and can do is, therefore, not at all determined by my individuality. I am ugly, but I can buy the most beautiful woman for myself. Consequently, I am not ugly, for the effect of ugliness, its power to repel, is annulled by money. As an individual I am lame, but money provides me with twenty-four legs. Therefore, I am not lame. I am a detestable, dishonourable, unscrupulous and stupid man, but money is honoured and so also is its possessor. Money is the highest good, and so its possessor is good. Besides, money saves me the trouble of being dishonest; therefore, I am presumed honest. I am stupid, but since money is the real mind of all things, how should its possessor be stupid? Moreover, he can buy talented people for himself, and is not he who has power over the talented more talented than they? I who can have, through the power of money, everything for which the human heart longs, do I not possess all human abilities? Does not my money, therefore, transform all my incapacities into their opposites?

Karl Marx, *Economic and Philosophical Manuscripts*

3.3 Opinions and Arguments

Regardless of what we are reading, the ability to summarize the main ideas is extremely valuable. It allows the reader to record how a piece of writing develops whether the writing is an essay, a short story, a play, a poem, or a novel. Critical thinkers, however, must go beyond understanding and be concerned with evaluating the reasonableness of a position.

In order to evaluate a position fairly, we must first decide whether the position is only a statement of the author's *opinion* or whether the position is also supported by reasons or arguments. An *opinion* can be either a factual claim, such as "The earth is growing warmer," or a value judgment such as "Cheating is wrong." In both cases, a claim is made, but no reasons or support is offered. By itself, the value claim that "Cheating is wrong," apart from any reasons or arguments to support the claim, is nothing more than a statement of the person's opinion. However, if the person gives a reason for believing that cheating is wrong, then the person has attempted to provide some support for the opinion. The person has given what we call an "informal argument." For example, imagine the following exchange:

Sally: I need to pass the calculus test, and I could do so if I cheated, but I believe cheating is wrong.
Joe: Why do you believe cheating is wrong?
Sally: I guess because my parents always told me cheating was wrong.
Joe: Do you always follow the advice of your parents?

Sally asserts that "cheating is wrong" and, upon being questioned, gives a reason: "My parents told me cheating is wrong." Giving a reason is better than simply stating an opinion. The reason in this informal argument provides some support for her opinion. The support, however, that a single reason gives to a claim is not as strong as the support a fully-stated formal argument provides. To give a *formal argument* is to present a set of reasons (premises) that offer special support for the opinion. From a purely psychological point of view, in a formal argument, the support is such that if a person accepts the premises, that person will be strongly inclined also to accept the conclusion. Sally's single reason for not cheating, "My parents told me cheating is wrong," does not provide sufficient support for the conclusion, "Cheating is wrong." One could accept the claim, "My parents told me cheating is wrong," and not be strongly inclined or moved to accept Sally's conclusion, "Cheating is wrong."

While such a psychological test is an easy and helpful way to determine whether an argument is formal or informal, we should not forget that one's psychological response to an argument is not an adequate test for whether or not it is a good argument. For our present purposes we are only interested in finding an easy way to draw a distinction between mere opinions, opinions where reasons are offered, i.e., informal arguments, and opinions where the reasons offered in their support are such that if one simply stated the reasons, the mind would be inclined to draw the proper conclusion. These we call formal arguments.

What then is a *formal argument*? Formal arguments consist of a claim (the *conclusion*) and other sentences (the *premises*) intended to give support to the claim. Formal arguments should be construed as conditional (if/then) statements. A conditional (if/then) statement consists of two parts: the antecedent, which follows the if and precedes the then, and the consequent, which follows the then. Formal arguments can be seen as conditional statements in which if one accepts what is stated in the antecedent, then one is strongly inclined to accept what is stated in the consequent. In order for Sally's reasoning for not cheating to be a formal argument, another premise (p1) must be added:

p1. If my parents tell me that something is wrong, then it is wrong.
p2. My parents told me that cheating is wrong.
C. Hence, cheating is wrong.

In this case, if one were to accept premises (p1) and (p2), then one would be compelled to accept the conclusion (C). On the other hand, if one were to accept only premise (p2), that does not compel the mind to accept the conclusion. In order for the mind to be moved from the claim "My parents told me that cheating is wrong" to the conclusion "Hence, cheating is wrong," we need what we call a *major premise*: "If my parents told me that something is wrong, then it is wrong."

A *major premise* is a conditional statement that should define or state the essential properties of the thing named in the *predicate term* of the argument's conclusion. In this case, the major premise should tell why something "is wrong." This example shows us that (at least for the most part) formal arguments need at least two premises. One of the premises should be a *major premise* that defines what is named by the predicate term of the conclusion. The second premise of the argument is called the minor premise. It tells us that the subject term of the conclusion (cheating) has the properties defined in the antecedent of the major premise; i.e., "Cheating" has the property of "being called wrong by her parents."

One simple test to help determine whether or not a set of premises is adequate to support a conclusion is to ignore the conclusion and simply state the premises. If, after stating the premises, the conclusion does not immediately come to mind, then more than likely, the argument is not a fully-stated formal argument. At best it is an informal argument which gives reasons for the conclusion, but the reasons are not sufficient to force the mind to accept the conclusion. More information is needed in the premises in order to lead the mind to the conclusion. Consider the following example.

p1. If an institution treats people as objects, then the institution is immoral.
p2. Slavery is an institution that treats people as objects.

These premises are adequate to support the conclusion that "Slavery is an immoral institution." Upon stating the premises, that and only that conclusion comes to mind. Either premise, however, stated by itself does not lead the reader to conclude that "Slavery is an immoral institution." The first premise, the *major premise*, is a general conditional statement that attempts to define why any institution is immoral. The second premise, the *minor premise*, states that slavery has the property named in the *major premise*, "treats people as objects." Only when the two are joined do we see that they must *entail* the conclusion "Slavery is an immoral institution." The general form of the argument is that, if something has the property of treating persons as objects, then it is immoral. Slavery has that property. Hence, slavery is immoral.

The nature of *logical entailment* will be the subject of our discussion of formal logic in Chapter Four. For now, it is enough to see that most formal arguments must have at least two premises and that a compelling argument will be one in which the statement of the premises will bring to mind the conclusion even though it is not stated.

The premises of a formal argument are intended to provide sufficient reasons for accepting the claim or conclusion. One reason people give arguments is to show others why their position is reasonable. That is to say, the premises support the conclusion most fully when the acceptance of the premises strongly inclines us to accept the conclusion. So, when reading material in which controversial claims are made, we should try to identify the reasons that are given in support of the claim. If no reasons are provided, we have only a statement of mere *opinion*. If reasons are given, we should ask if they are sufficient to warrant the conclusion. One simple test is to ask whether stating the reasons inclines us to state the conclusion.

In many cases, there are some key words that tend to indicate the *conclusion* and some that tend to indicate *premises*. Conclusion indicators include the following words and phrases: *hence, therefore, so, thus, consequently, it follows that, we may infer*, or *I conclude that*. Premise indicators include the following words and phrases: *because, for, as, as shown by, the reason is, by reason of*, and *in view of the fact that*.

Although these indicator words are present in many arguments, they need not be. Often, it is up to the reader to determine what the conclusion is and what reasons are given in its support. Consider the following example:

> Plato's Academy was a poor excuse for a university. None of the teachers had college degrees. Admission was open only to those who could do Euclidean geometry, and the Academy required music and astronomy of every student.

This is clearly an informal argument (given in jest, of course) to support the claim that Plato's Academy was "a poor excuse for a university." The first sentence is the conclusion and the next two sentences are premises, yet there are no premise or conclusion indicators. Thus the reader must supply those indicators to understand the argument fully.

Exercise 3.3

A. Indicate whether the following passages are opinions, informal arguments, or formal arguments.

1. Plato, a student of Socrates, was the greatest philosopher who ever lived.

2. Requiring each student to study certain texts central to each discipline is not a very good idea.

3. Some people believe Francis Bacon wrote Shakespeare's plays.

4. Poetry is important to study because it exemplifies the human mind at the peak of creativity.

5. The importance of learning Spanish should be obvious. Spanish is a language spoken by kings and queens.

6. If there are no relevant differences between applicants, then each should be given an equal chance. There are no relevant differences between races. Hence, members of all races should be given an equal chance.

7. Teachers should not spank pupils because teachers are bigger and students are not allowed to hit back.

B. In the following arguments identify the premises (p) and conclusions (c). In some cases it will be helpful to summarize the argument in order to understand it better.

1. It seems that mercy cannot be attributed to God. For mercy is a kind of sorrow, as Damascene says. But there is no sorrow in God; and therefore there is no mercy in him.

--Thomas Aquinas, *Summa Theologica*, I, Question 21, Article 3

2. But the peculiar evil of silencing the expression of an opinion is, that it is robbing the human race; posterity as well as the existing generation; those who dissent from the opinion, still more than those who hold it. If the opinion is right, they are deprived of the opportunity of exchanging error for truth: if wrong, they lose, what is almost as great a benefit, the clearer perception and livelier impression of truth, produced by its collision with error.

   --John Stuart Mill, "On Liberty," in Max Lerner, ed., *Essential Works of John Stuart Mill* (New York: Bantam Books, Inc., 1961), p. 269

3. Good sense is of all things in the world the most equally distributed, for everybody thinks himself so abundantly provided with it, that even those most difficult to please in all other matters do not commonly desire more of it than they already possess.

   --Rene Descartes, *Discourse on Method*

4. And no man can be a rhapsode who does not understand the meaning of the poet. For the rhapsode ought to interpret the mind of the poet to his hearers, but how can he interpret him well unless he knows what he means?

   --Plato, *Ion*

3.4 Enthymemes: Arguments with Missing Premises

As we have seen, arguments are sometimes given without all of the needed premises. We called these informal arguments. It is also possible to understand such informal arguments as what are called *enthymemes*. Enthymemes are arguments with missing premises. The presence of enthymematic arguments is not necessarily bad. Sometimes not all of the premises necessary to make an argument a full-fledged formal argument are stated because the speaker assumes that his or her audience already understands and agrees to the missing premise. For example, someone might say, "Susan is very bright because she is a language and physics major." The implied premise in this enthymematic argument is the major premise which defines the predicate term "is very bright" in the argument's conclusion: "If someone is both a language and physics major, then that person is very bright." The argument, when stated fully, would be:

p1. If someone is both a language and physics major, then that person is very bright.
p2. Susan is a language and physics major.
C. Hence, Susan is very bright.

In everyday discourse, enthymemes are quite common and frequently do not cause problems. However, such is not always the case. When we are evaluating a controversial claim, it is sometimes very important for us to understand exactly what premises are being assumed. Sometimes the assumed premise is just the one that is most questionable and would, were it stated, make the argument unacceptable. Consider the following example of a moral argument: "Capital punishment should be instated because capital punishment deters crime." This enthymematic argument assumes the major premise that, "If something deters crime, then it should be instated." Such a premise, once stated, should make most of us a bit leery of the argument. There are many deterrents to crime that most of us would not endorse, e.g., putting the poor in prison, killing all delinquents, or placing television cameras in our homes and work places in the tradition of Big Brother. Because something deters crime is not in itself a good reason to adopt the policy. By stating the implied premise, we easily see the weakness of the argument.

When informal or enthymematic arguments are used in discussions about moral matters, the result is often unnecessary dispute. If all the premises of arguments had been made clear, then the ambiguity in the reasoning would be obvious. Consider the following enthymematic argument concerning abortion: "Abortion is wrong because to kill human beings is murder." If we state the argument in standard logical form, we see that the minor premise (p 2 below) is being assumed. The argument is as follows:

p1. If something kills human beings, then it is wrong.
p2. Abortion kills human beings.
C. Abortion is wrong.

Unfortunately, the assumed minor premise that "abortion kills human beings" needs much argument to support it. Whether a fetus is a human being is the central point of most debate in the abortion issue. Again, by being aware of the needed missing premise in this moral argument, we are in a much better position to evaluate the position critically.

While the conditions for constructing good formal arguments will become more clear as we study the properties of valid deductive arguments, it is nonetheless worth noting that good arguments about moral issues should always contain a major premise that states some general *moral* principle (If an act does a, b, c, and d, then one *ought* to do x) and a minor premise which attempts to show that some action or practice has properties a, b, c, and d. The evaluation of the position should then focus on whether the principle stated in the major premise is acceptable or whether or not the action or practice described in the minor premise is indeed an instance of that principle.

Exercise 3.4 Enthymemes

After identifying the premise and the conclusion, supply the missing premises for the following enthymematic arguments. Remember that a *major premise* is a conditional statement that defines the predicate term in the conclusion. If the minor premise has already been stated, it will determine the nature of the first part of the major premise.

For example, if you were given the enthymematic argument, "Bill should be elected president because he is a good speaker." The minor premise, "He is a good speaker" determines what must be contained in the first part of the major premise, i.e., "If someone is a good speaker, then . . . ."

1. "He would not take the crown.
   Therefore it's certain he was not ambitious."
   --William Shakespeare, *Julius Caesar*, II, ii

2. Logic is important because it allows us to look critically at ourselves, our beliefs, and our actions.

3. Karl Marx was not a good person because he was a revolutionary.

4. Cigarette smoking should be banned because smoking causes cancer.

5. Canned Heat were great musicians because they sold many albums.

6. Sally will be happy because she married a wealthy man.

7. Jerry read the lesson, so he will pass the test.

8. A woman can never be a good president, because women are too emotional.

9. Philosophy professors are a burden to society because they do not really work.

10. My English teacher is great because he doesn't grade us down for grammar.

Glossary for Chapter Three

Argument: a set of claims, one of which (the conclusion) is meant to be supported by the others (the premises)

Conclusion Indicators: words that tend to indicate the conclusion of an argument: e.g., so, hence, thus, therefore, I conclude that, and consequently

Conditional Statement: a hypothetical if/then statement. The part following the if is called the antecedent; that part following the then is the consequent. The meaning of conditionals is usually if certain conditions are met, then a specific consequence will follow.

Emotive Language: language that makes factual claims in a way that arouses the emotions of the audience

Enthymeme: an argument with premises omitted, usually because the speaker believes the audience would accept the missing premise

Euphemism: a word or phrase describing a situation in terms that make the situation sound better than it is

Formal Argument: an argument where all of the premises and the conclusion are stated in such a fashion that if one accepts the premises, one is inclined to accept the conclusion

Informal Argument: an argument giving reasons for a position, but not stating the argument so that the conclusion follows in an obvious fashion. Informal arguments can usually be translated into formal arguments by adding missing premises and constructing a major premise.

Major Premise: a premise, often a conditional statement, that defines or states the essential properties of what is named in the predicate of the argument's conclusion

Minor Premise: a premise that tells that the subject term in the conclusion has the properties defined by the major premise

Premise Indicators: words that tend to indicate the premises of an argument, e.g., because, as, as shown by, the reason is, by reason of, and in view of the fact

Rational Passions: positive emotions that are aroused by good arguments and well-reasoned positions, and negative emotions that are aroused by weak arguments, fallacious reasons, and poorly reasoned positions

Notes for Chapter Three

[1] Sharon Bailin discusses this notion of rational passions, "being appropriately moved by actions or problems that invite intellectual investigation, in Chapter Five of her book, *Achieving Extraordinary Ends: An Essay on Creativity* (Dordrecht: D. Reidel, 1988). See also Israel Sheffler's "In Praise of Cognitive Emotions," in his *Science and Subjectivity* (Indianapolis: Hackett Publishing Co., 1982), pp. 139-157.

[2] Ludwig Wittgenstein, *Tractatus Logico-Philosophicus*, trs. D. F. Pears and B. F. McGuinness (London: Routledge and Kegan Paul, 1961), p. 51.

Chapter Four

Evaluating Arguments: Deductive Reasoning and Logical Form

> The object of reasoning is to find out, from consideration of what we know, something else which we do not know. Consequently, reasoning is good if it be such as to give true conclusions from true premises, and not otherwise.
>
> --Charles Sanders Peirce, "The Fixation of Belief"

4.1 Introduction

Critical thinkers must be able not only to identify arguments, but also to evaluate the strength of those arguments. To do this we need to address only a few basic questions. First, for any formal argument we should ask whether the argument is valid. Validity is the subject of this chapter. Second, for any argument, formal or informal, we ask whether the premises given in support of the conclusion are acceptable. If the premises are themselves unacceptable, then they cannot provide good reasons for accepting the conclusion. Instruction in evaluating the strength or acceptability of premises will be given in Chapter Five. Third, does the argument commit any of the common or "informal fallacies"? Chapter Six will discuss these fallacies.

When we consider whether an argument is valid, we ask whether the premises, if we accept them as true, entail or imply the conclusion. To question whether an argument is valid is not to ask whether the premises are in fact true; it is rather to ask conditionally or hypothetically whether the premises, if they were true, would guarantee the truth of the conclusion.

The validity of an argument is determined by a special relationship between the premises and the conclusion. Any good argument is one in which the conclusion has at least strong support from its premises; bad arguments tend to be those where the premises provide weak support. The strongest support that premises can provide for a conclusion is that of a valid deductive argument. The relationship between the premises and conclusion is such that if the premises are assumed to be true, then it is impossible for the conclusion to be false. An invalid argument, on the other hand, is one in which it is possible for the premises to be true, while the conclusion is false. In other words, if an argument is invalid, then one could accept the premises and yet deny the conclusion without contradicting oneself. For the purpose of evaluating arguments, this simple definition of an invalid argument is very important.

How can the assumed truth of the premises of a valid argument guarantee the truth of the conclusion? It is the **formal structure** of a valid deductive argument that guarantees that the truth-value found in the premises is always transferred to the conclusion. In a valid argument, if the premises are true, then the conclusion must be true. We can say, then, that valid deductive arguments are "truth preserving." Because no other kind of argument has such a high degree of this "truth preserving" property, valid deductive arguments function as a normative or ideal type. In other words, ideally it would be desirable if all of our reasoning had the truth-preserving nature of a valid deductive argument.

As we come to understand the nature of validity, we must keep in mind that determining the validity of an argument is quite different from determining the actual truth of the premises or the conclusion. Determining the acceptability of premises involves looking at the evidence or reasons in their support. This will be the subject of the next chapter. Validity is **not** a function of the **actual** truth or falsity of the argument's premises. Premises make claims about the way things are; the validity of a formal argument, however, is determined by its logical form. By virtue of its form, if the premises make claims that are assumed to be true, then the conclusion cannot be false. Let's see if we can understand this important notion of logical form.

At first glance, to study the logical form of arguments may seem an abstract endeavor. However, there is really nothing any more complex or unique about the study of logical form than the study of the form of other things. The study of the formal characteristics of a subject, quite apart from its material parts or content, is common to many human endeavors and experiences. The study of logical form is no different from other formal concerns, such as the study of the form of a play, a novel, or a piece of music. For the most part, human knowledge begins with the ability to recognize general patterns in what first appears to be a "willy-nilly" arrangement of particular things or events. We understand particular events or things by seeing them as examples of general formal patterns, structures, or types. Perhaps a few examples will clarify this assertion.

When we study the art of cooking, we quickly see that good cooks follow a recipe which tells them how to arrange the ingredients of a dish. The recipe prescribes a formal pattern or structure which can be applied universally to groups of particular ingredients in order to create the desired dish. For example, a recipe for bread tells us how to combine the ingredients of flour, yeast, oil, and water such that they become loaves of bread, rather than pizza crust. If the dish turns out poorly, it is usually because the ingredients were structured in an improper way or were of substandard quality; e.g., the yeast may have been old. In an analogous fashion, we shall see that, if an argument is bad, it is either because its form is not that of a valid argument or because the premises (the ingredients of the argument) are unacceptable because they are either questionable or false. Good arguments have both a proper logical form and acceptable premises. We call such arguments *sound*.

As in the example of cooking, many acts of human understanding and creativity structure items in terms of a prescribed general pattern or form. This is how artists create and how all of us make sense of our world. We perceive particulars as examples of a more general form, principle, or pattern. We identify individual people by first seeing that they are examples of human beings in general and then see the more specific characteristics. This mode of thinking applies to arguments as well. Arguments consist of particular premises and conclusions that exemplify general formal patterns. Valid arguments are of such a form that their premises always entail their conclusion. That is, if the premises are assumed to be true, then the conclusion cannot be false. We need to understand now how premises of valid deductive arguments entail conclusions by virtue of their form.

4.2 Identifying Logical Form

If we must be able to identify the logical form of an argument prior to determining its validity, what is logical form? How do we identify it?

Consider the following arguments:

p1. If dogs are mammals, then dogs have hair.
p2. Dogs are mammals.
C. Hence, dogs have hair.

p1. If Sally fails to get enough rest, then she will be sick.
p2. Sally fails to get enough rest.
C. Hence, she will be sick.

p1. If Joe reads the texts, then he will pass.
p2. Joe reads the texts.
C. Hence, he will pass.

All of these arguments, while different in terms of their subject matter, are alike in an important way: each has the same logical form. Each argument has what we call a major premise, which is a conditional statement: "If _____, then ......" We should remember from Chapter Three that conditional statements consist of two parts: the antecedent, the part of the statement which follows the "if," and the consequent, the part of the statement which follows the "then." Each argument also has a second "minor" premise, which repeats what is claimed in the antecedent, and a conclusion, which repeats what is claimed the consequent.

In Chapter Three we saw that certain words tend to indicate premises while others indicate conclusions. This helped us to make the distinction between premises and conclusions. Likewise, within any argument, we can make a distinction between proposition and logical connectives. By making such a distinction, we can more easily see the logical form shared by the arguments given earlier. Propositions are sentences that have a truth-value of either true or false and do not contain logical connectives. Logical connectives are words that join propositions to create complex sentences. They include the words and, or, if/then, and not. As we have already seen, words such as hence, and thus are used to indicate conclusions. Sentences that consist of propositions joined by the logical connectives are called complex sentences.

In our examples, the logical connective if/then occurs in the first premise. If we let the place markers _____ and ..... represent the two propositions that make up the antecedent and consequent, we can see the logical form:

p1. If _____, then .....
p2. _____.
C. Hence, ...

Each of our three examples exemplifies this same logical form. Each argument is an example of the argument form called Modus Ponens--which means "to reason from the positive mode."

A less cumbersome way to identify the logical form of an argument is to use letters (such as A. B. C. D) rather than place markers to represent the particular propositions. If we do this. then the logical form of the argument

p1. If dogs are mammals. then dogs have hair.
p2. Dogs are mammals.
C. Hence. dogs have hair.

can be symbolized as:

p1. If D. then H.
p2. D.
C. Hence. H.

As a matter of convention. the letters x. y, and z are not used to symbolize particular propositions but rather are reserved for special functions. It is also the custom to use the letters p, q, and r to symbolize general argument patterns rather than particular arguments. Thus the general form of a Modus Ponens argument is as follows:

p1. If p, then q
p2. p
C. Hence, q

When we symbolize the pattern of particular arguments. it is helpful to use letters that bear some resemblance to the actual sentences for which they stand. This allows us to avoid unnecessary confusion if we were to symbolize more complicated arguments. For example. the premise "If dogs are mammals, then dogs have hair" could be symbolized as "If DM. then DH." The letters DM have a greater similarity to the sentence "Dogs are mammals" than does D.

Let us apply this method of using symbols to display the logical form of another argument:

p1. If Joe is virtuous, then Joe will be faithful.
p2. Joe is not faithful.
C. Hence, Joe is not virtuous.

We first distinguish any logical connectives (and, or, if/then, not) from the propositions themselves and then let appropriate letters represent the propositions. When we do this, then the argument above can be symbolized as follows:

p1. If JV, then JF.
p2. Not JF.
C. Hence, not JV.

Notice that we interpret the not in the second premise and in the conclusion to mean that a claim made in the first premise is being denied. The sentence "Joe is not faithful" states that "It is not the case that Joe is faithful." Hence, we symbolize it as "not JF."

This argument form is called Modus Tollens--which means "to reason from the negative mode." The general form of a Modus Tollens argument is as follows:

p1. If p, then q
p2. Not q
C. Hence, not p

Let us consider yet another example of how one might symbolize the parts of an argument to display its logical form:

p1. Sally was elected president or Sally was elected treasurer.
p2. Sally was not elected president.
C. Hence, Sally was elected treasurer.

We first distinguish the logical connectives (and, or, if/then, and not) from the propositions and then let appropriate letters represent the propositions. When we do this, then the argument above can be symbolized as follows:

p1. SP or ST
p2. Not SP
C. Hence, ST

This form of deductive reasoning in which two or more alternatives are proposed and then all but one eliminated is an example of the argument form called Disjunctive Syllogism. The general form of a Disjunctive Syllogism is as follows:

p1. p or q
p2. Not p
C. Hence, q

Arguments that follow the patterns of Modus Ponens, Modus Tollens, and Disjunctive Syllogism are common, valid, and useful. In the following section we will learn a method to show why these argument forms are such that, if one accepts their premises, then one cannot reject the conclusion. We will see why, if the premises of a valid argument were assumed to be true, then its conclusion could not be false, regardless of the actual truth or falsity of the premises.

Modus Ponens, Modus Tollens, and Disjunctive Syllogisms are common patterns of reasoning. We should also understand that many patterns of valid reasoning, while far more complex, tend to be combinations of these simple patterns. We should also be aware that not all patterns of reasoning which seem plausible are valid. We will study some fallacious forms of reasoning in the pages that follow.

Exercise 4.2

Symbolize the following arguments and tell whether each is an example of Modus Ponens, Modus Tollens, or a Disjunctive Syllogism.

1. If bacteria is in the egg salad, then the guests will become ill. The guests do not become ill. Hence, bacteria is not in the egg salad.

2. Sally is either a sophomore or Sally is a junior. Sally is not a junior. Hence, Sally is a sophomore.

3. If Joe winks at Sally, then Joe is interested in dating her. Joe winks at Sally. Hence, Joe is interested in dating her.

4. The universe is the result of chance or it is the result of design. It is not likely that the universe is the result of chance. Hence, it is likely that it is the result of design.

5. If there are virtuous leaders, then there will be virtuous citizens. There are not virtuous leaders. Hence, there are not virtuous citizens.

6. Sally is bored or she is sick. She is sick. Hence, she is not bored.

7. If Sally studies for the test, then she will pass. She does not study for the test. Hence, she will not pass.

8. If we spend enough money, then poverty will end. Poverty has not ended. Hence, we have not spent enough money.

4.3 Logical Connectives and Truth-functional Connectives

In order to determine whether or not an argument is valid, we need to display the argument's logical form. As we have seen, one step in this process is to analyze complex sentences and distinguish between the logical connectives and the propositions in an argument and then to symbolize the propositions with the appropriate letters (A, B, C,...). A further step in this process is to define clearly the logical connectives (and, or, if/then, and not) and then to use symbols to represent those logical connectives.

There are many systems of notation for the logical connectives. We will use the following symbols:

& The connective and will be symbolized as &. The sentence "Sally is passing and Sally is happy" can be symbolized as SP & SH.

V The connective or will be symbolized as v. The sentence "Sally will pass or Sally will fail" can be symbolized as SP v SF.

-> If/then will be symbolized as an arrow: ->. The sentence "If Sally passes, then she will celebrate" can be symbolized as SP -> SC.

— Not or "it is not the case" will be symbolized as -. The sentence "Sally did not pass" can be symbolized as -(SP). Since the negation sign reverses the truth-value of whatever proposition it precedes, this means that "It is not the case that Sally passed."

These logical connectives (&, v, ->, and -) are called truth-functional connectives. That is to say, while the truth of any particular proposition, (e.g., "The cat is on the mat") depends on whether the proposition corresponds to "the way things are," the truth of compound sentences that employ both propositions and truth-functional connectives does not depend only on the truth of the propositions. Their truth is also a function of the nature of the truth-functional connectives in that compound sentence. For example, the truth conditions for the compound sentence "It is raining and it is 100 degrees" are different from the truth conditions for the sentence, "It is raining, or it is 100 degrees," which in turn is different from the truth conditions of the sentence "If it is raining, then it is 100 degrees." Different truth-functional connectives create sentences that have different truth-conditions.

Before we examine how the truth-functional connectives are defined in our system of inference, a word of warning is in order. Because words used in everyday discourse do not always have the same meaning each time they are used, we should be aware that problems will sometimes occur when we try to translate our truth-functional connectives into the language of everyday English or to translate English sentences into sentences using truth-functional connectives. For example, not all instances of English sentences which use "or" will be equivalent in meaning to our carefully defined truth-functional connective v. Likewise, not all instances of if/then in English will correspond to the way we define the arrow, ->. As long as we are aware of this, it will not be too much of a problem. The truth-functional connectives in our system will be defined so that all meanings of or or if/then can be expressed, even though there may not be an initial one-to-one correspondence between the language and the truth-functional connectives. The reader or speaker of English often must clarify the meaning of the sentences or the intentions of the speaker so that the sentences can be properly symbolized. We must ask what is being claimed and what truth conditions would verify or falsify the claim. Once we understand what is being claimed, then it is possible to capture the sense of the claim in our symbolic system.

Let us see how using truth-functional connectives to determine validity works. There is a one-to-one correspondence between the conjunction & and the English use of and. We will say that any conjunction, such as "Sally is wise and Sally is poor," has a truth-value of "true" **if and only if** both propositions are true. Thus any compound sentence of the form (p & q) will have a truth-value of "true" if and only if both of its components (p and q) are true. If either part of the conjunction is false, the entire conjunction (p & q) will be false. Given this definition, if any part of a conjunction is false, the entire conjunction is false, no matter how long a conjunction might be, e.g., (p & q & r & s...).

Those sentences joined by or (disjunctions), such as "Sally is wise or Sally is poor," will be given a truth-value of "true" if, at a minimum, any part of the disjunction is true. Thus, any compound sentence of the form (p v q) will have a truth-value of "true" if and only if at least one of its components (p or q) is true. Given this definition, if any part of a disjunction is true, the entire disjunction is true, no matter how long the conjunction might be, e.g., (p v q v r v s ...). The truth-functional connective disjunction is defined as an inclusive "or" and has a truth-value of "false" if and only if all parts of the compound sentence are false.

As we have pointed out, not all uses of or in English are equivalent to our definition of v. Our truth-functional connective v is not defined in the exclusive sense of "either p or q but not both." However, this inclusive definition gives us the tools to capture the exclusive sense. As long as our system gives us this ability, there is no problem. If we want to capture this exclusive sense of or with our symbolic techniques, we can do so by simply using the formula [(p v q) & -(p & q)]. This formula states that it is the case that p or q is true, but it is not the case that both p and q are true.

The translation of traditional if/then or conditional statements into the truth-functional connective -> is a bit more tricky. In ordinary language, we use conditional if/then statements in many different ways, and it is difficult to say just what truth conditions are common for all of the various uses. Yet, if we are to stipulate the truth-conditions for our truth-functional connective ->, it is essential that we discover such a common element in all conditionals.

In order to get a sense of the problem, consider the following conditional statements:

1) If I pass college algebra, then I will take calculus.

2) If it is raining, then there are clouds.

3) If a figure is a triangle, then it has three sides.

4) If there are no absolute moral standards, then Jesus and Hitler were of equal virtue.

The first sentence says something about a student's intentions; the second sentence states a causal relationship in nature; the third sentence states a truth about the definition of a triangle, and the last sentence is a statement intended to reduce the claim in the conditional's antecedent to absurdity. Is there anything that all four of these conditionals have in common? Only one thing is true of each: each conditional sentence would be considered false if the antecedent were thought to be true but the consequent were false. For example, the person who made the first conditional statement would have uttered a false statement if he or she passed college algebra but did not take calculus. We would say that the person either changed his or her mind or had lied. The causal claim in the second conditional would be considered false if we looked out the window and found that it was raining but not a cloud was to be seen. The third conditional would be falsified if we discovered a triangle which did not have three sides. And finally, the last conditional would be false for anyone who believed that there were no absolute moral standards but who also believed that Jesus and Hitler were not equally virtuous. So, the only thing all conditionals have in common is that each is false whenever the proposition (or propositions) comprising the antecedent (p) is true and the proposition (or propositions) comprising the consequent (q) is false.

The question of when conditionals are to be considered true is more difficult to answer. Obviously, in everyday English, we consider a conditional to be true if both the antecedent and the consequent are true. For example, the statement "If Sally is a medical doctor, then Sally passed calculus" is true if Sally is both a doctor and has passed calculus. So, at least in ordinary usage, we say that conditionals are true if the antecedent and the consequent are both true; and, as we have seen, conditionals are false whenever the antecedent is true but the consequent is false.

However, there are two more possibilities that we must consider. What truth value do we assign to conditionals that have both false antecedents and false consequents? Consider the following example: "If Rod McKuen is a Nobel Prize winner, then I am a monkey's uncle." Here, the antecedent and the consequent are both false, but the claim seems to be a true claim. It means, "because I am not a monkey's uncle, neither is Rod McKuen a Nobel Prize winner." Consider also a conditional that has a false antecedent and a true consequent: "If I had $1,000,000, then I would go to Paris." Here both what is being claimed and what truth conditions would verify or falsify the claim seem clear. If, for example, I did obtain $1,000,000 and yet did not go to Paris, then the conditional would be falsified. The way we falsify this conditional is no different than any other conditional. So, because we know what conditions would falsify the conditionals with false antecedents, they must be given a truth- value of true. There is no other alternative.

While it is sometimes difficult to determine the meaning or the truth-value of conditionals with false antecedents, for the purposes of our system of inference with its goal of preserving the truth through the reasoning process, we shall treat all such conditionals with false antecedents as true. If the truth-value of p is false and the truth-value of q is false, then the truth-value of the conditional (p -> q) will be true. If p is false and q is true, then the truth-value of (p -> q) will be true. And, of course, for the normal manner of using conditionals, if the truth-value of p is true and the truth-value of q is true, then the truth-value of (p -> q) will be true also.

Even though this analysis may seem a bit counter-intuitive, if we define the (->) in this way, it is impossible for us to construct an argument in which we infer a false conclusion from true premises, even in those cases in which the premises contain conditional statements with false antecedents and false consequents. For example, if a premise in a valid argument claimed something silly such as "If the moon is made of cheese, then Elvis is in an AAA Motel on Mars," it would be logically impossible to infer the truth of the antecedent ("The moon is made of cheese") or the consequent ("Elvis is in a AAA Motel on Mars") by itself. It is imperative that any system of deductive inference not allow us to infer false conclusions from true premises and that the sentences in our language can be translated into that system's symbolic notation. Both of these conditions are met if we define ->, &, and v as we have done. Our notion of validity (if the premises are true, then it is impossible for the conclusion to be false) is thus preserved.

In normal usage, the conditional inferences claim that if we consider the conditional statement (p -> q) to be true and if p is true, then q must also be true. This ordinary way is identical to the Modus Ponens form. Our ordinary understanding of conditionals also claims a conditional (p -> q) to be false if p is true, but q is false. That is to say, the truth of p does not imply the truth of q.

One of the problems with translating conditional statements into symbolic form is that the meaning or sense of most conditionals is often not clear. Sometimes people mean more when they assert the truth of the if/then relation than simply "if the antecedent is true, then the consequent will also be true" or that p implies q. For example, someone may make the claim, "If the economy is strong, then Smith is a good president," and mean not only "if the antecedent is true, then the consequent is true," but also "if the antecedent is false, then the consequent is false." That is to say, if the economy is strong, then Smith is a good president, and if it is not strong, then Smith is not a good president. Such claims, once understood for what they are, can be symbolized as (SE -> GP) & (-SE -> -GP). The intended meaning of such a claim is not captured if we treat it as a simple conditional.

Sometimes when people use conditional statements they mean "if the antecedent is true, then the consequent is true" and "if the consequent is true, then the antecedent is true" [(p -> q) & (q -> p)]. In cases such as these, sometimes called bi-conditional, and symbolized as <-->. For such bi-conditionals, the truth or falsity of the antecedent and consequent always correspond. For example, when biologists say, "If a creature has a heart, then it has a kidney, and if it has a kidney, then it has a heart," they are making a double claim that the truth of p implies the truth of q and the truth of q implies the truth of p. In addition, they are claiming that, if p is false, then q is false or that, if q is false, then p is false.

The ambiguity of conditional statements in everyday usage makes it essential that we know what is being claimed by the maker of the statement. Obviously, we often cannot know what was intended in written passages when the writer is absent. But when the person making the conditional claim is present, we should always ask, "Do you mean that if the antecedent is true, then the consequent is true, or that if the antecedent is true, then the consequent is true and also that if the antecedent is false, then the consequent is false?" But no matter what the meaning intended by the maker of the statement, the truth functional connective (->) must always be interpreted to mean that the conditional sentence is false only if the antecedent (p) is true and the consequent (q) is false. All other combinations must be defined as true conditional statements. If the sentence to be symbolized means more than that, then those differences can be indicated through added methods of symbolization such as the bi-conditional.

This interpretation of the truth conditions for conditional statements, when combined with vigilant attempts to clarify what meaning the speaker intends, will allow us to symbolize correctly the meaning of all such statements.

Our final truth-functional symbol is the negation, symbolized as (-). The negation sign merely reverses the truth value of the variable or group of variables it precedes. Hence, if the statement p is true, then -p is false. In like manner, if (p & q) is true, then -(p & q) is false. On the other hand, if -(p & q) is true, then at least p or q in the compound statement (p & q) is false.

In summary, we call the logical connectives truth-functional because the truth-value of the compound sentence is determined both by the truth values of its component propositions and by which logical connectives join the parts. There are only three relations that need to be learned:

1. If the compound sentence is joined by &, then all parts must be true in order for the *conjunction* to be true.
2. If the compound sentence is joined by v, then all parts must be false in order for the *disjunction* to be false.
3. If a sentence is a conditional (->), then it is false only if the antecedent is true and the consequent false.

All arguments, regardless of how long they are or how many premises are involved, can be joined together by truth-functional connectives. Hence, theoretically an infinite string of premises could be combined into one long compound sentence simply by joining each premise to the next with and (&). In fact, this is the method we will use when we test for validity. With the premises all joined by and (&), the conclusion is then joined to the premises by if/then (->). This procedure displays nicely the conditional nature of deductive reasoning and the definition of validity: if the premises are all true, then the conclusion cannot be false. This relationship between validity and conditional statements makes understanding the logic of conditional inferences very important. All deductive arguments can be construed as conditional inferences in which the premises are the antecedents and the conclusion is the consequent. If it is impossible for the conditional to be false (i.e., have true premises and a false conclusion), then the conditional is valid.

Before we go on to discover some valid argument forms, we can summarize all that we have said about our truth functional connectives in the four truth tables below. To set up a truth table, we take all possible truth values of the variables and then show how the truth of the compound sentence with its specific truth functional connective is dependent upon the truth value of the sentences symbolized by the variables and the nature of the connective.

TRUTH TABLES

1. Conjunction: The table below shows that given all possible truth values of p and q, any compound sentence of the form (p & q) if true *if* and *only if* both p and q are true.

	p	*q*	*p & q*
*	T	T	T
	T	F	F
	F	T	F
	F	F	F

2. Disjunction: The table below shows that given all possible truth values of p and q, any compound sentence of the form (p v q) is false *if* and *only if* both p and q are false.

	p	*q*	*p v q*
	T	T	T
	T	F	T
	F	T	T
*	F	F	F

3. Conditional: The table below shows that any conditional statement of the form (p -> q) is false *if* and *only if* p (the antecedent) is true and q (the consequent) is false.

	p	*q*	*p->q*
	T	T	T
*	T	F	F
	F	T	T
	F	F	T

4. Negation: The table below shows that when p is true, -p is false, and when p is false, -p is true. From this definition of conjunction and negation, we can easily see that the formula (p & -p) will always be false. This is called a logical contradiction.

p	*-p*	*p & -p*
T	F	F
F	T	F

Given our knowledge of the truth-functional connectives, we can now begin to derive some very simple valid argument forms and to show why other forms of reasoning are invalid.

Exercise 4.3

A. Using letters and the truth-functional connectives (&, v, ->, and -), symbolize the following complex statements.

Example:
a.) Descartes was a mathematician and a philosopher. DM & DP
b.) If Sally cheats, then she will be expelled. SC -> SE

1. Socrates was poor and wise.

2. Plato was a liberal or a conservative.

3. If one follows the laws of logic or has help from the divine, then one can discern the truth.

4. If Plato and Aristotle were students, then Socrates was the teacher.

5. If cats are mammals and dogs are mammals, then cats are dogs.

6. If men are rational and women are not men, then women are not rational.

B. Given the definitions of the truth-functional connectives, tell whether the following logical formulas, understood as sentences joined together with truth-functional connectives, are true or false. Consider p to be true and q to be false. Treat formulas within parentheses as single complex sentences.

Example: (p v q)
Solution: If for any statement of the form (p v q) either part of the disjunction is true, then the entire disjunction is true. Since we know p is true, then the disjunction must be true.

Exercises:

1. (p & q)
2. (p v q)
3. (p v -p)
4. (p -> q)
5. (p & -p) v (q & -q)
6. (p -> -q) -> q
7. (p -> q) -> (p & -p)
8. -(p -> -q)
9. [(p -> q) & q] -> (p v q)
10. [(p v q) & (p -> -p)] -> q
11. -p -> (p -> q)
12. [(p v q) & q] -> p
13. [(p -> -q) & -p] -> q
14. -(p v q) -> -p & -q
15. (p v -p) -> (q v -q)

4.4 How to Determine Validity

The primary purpose of displaying the logical form of an argument is so that we can determine whether or not the argument is valid. We need to find an easy way to determine whether the argument is of such a form that if its premises are true, it will be impossible for its conclusion to be false. Since we know that for all valid arguments, if the premises are true, the conclusion will be true, it follows that if an argument form can have true premises and a false conclusion, it is invalid. Given the definition of validity, our manner of checking for validity will be first to symbolize the argument and then to see if we can consistently assign truth-values to each variable such that the premises are true but the conclusion is false. If we can, then by definition we know it is an **invalid** argument.

However, first we must understand how to symbolize an argument. We should consider all arguments to be conditional statements in which the premises make up the antecedent and the conclusion is the consequent. For example, consider the following argument:

p1. If the students study, then they will pass.
p2. The students do not study.
C. Hence, they will not pass.

First, we can symbolize each sentence thus:

p1. SS -> SP
p2. -SS
C. -SP

We then turn the argument into a conditional statement in which the premises become the antecedent and the conclusion becomes the consequent:

$$\overset{p1}{[(SS \text{ -> } SP)} \quad \& \quad \overset{p2}{-(SS)]} \text{ -> } \overset{C}{-(SP)}$$

Notice that the premises are joined with and (&).

To symbolize arguments as compound conditional statements corresponds nicely to the definition of validity which states that for any valid argument, if the premises are true, then the conclusion cannot be false. **All valid arguments are true conditional statements in which the premises are the antecedent and the conclusion is the consequent. All invalid arguments are false conditional statements in which the premises (the antecedent) are true but the conclusion (the consequent) is false.**

Because there is only one way in which any conditional statement can be false--the antecedent is true, but the consequent is false, any argument which is symbolized as a conditional and in which it is possible to have true premises but a false conclusion is a false conditional and is hence invalid. Therefore, ascertaining whether an argument is invalid is as easy as ascertaining whether truth-values can be consistently assigned to the variables such that the conclusion is false while the premises are true. Let's return to the argument above and check its validity. We already have symbolized the argument thus:

$$[(SS \text{ -> } SP) \ \& \ \text{-}(SS)] \text{ -> } \text{-}(SP)$$

Next we must try to assign truth-values to the premises and to the conclusion such that the conclusion -(SP) is false while the premises (SS -> SP) & (-SS) both remain true. That is to say, we must try to make the conditional false.

1) In order for the conclusion -(SP) to be false, SP must be true.

$$\begin{array}{lll} [(SS \text{ -> } SP) & \&\text{-}(SS)] & \text{->}(SP) \\ & & \quad T \\ & & \quad (F) \end{array}$$

2) Thus, wherever SP occurs in the argument, we must assign a truth-value of T.

$$\begin{array}{llll} [(SS \text{ -> } SP) & \& & \text{-}(SS)] & \text{->}(SP) \\ \qquad\quad T & & & \quad T \\ & & & \quad (F) \end{array}$$

3) We can make our second premise -(SS) true only by making SS false.

[(SS -> SP)   &-(SS)]   ->(SP)
T   F   T
(T)   (F)

4) Therefore, wherever SS occurs in our argument we must give SS a truth-value of F. When we do this, premise #1 must be assigned a truth-value of T because it is a conditional with a false antecedent and a true consequent.

[(SS -> SP)   &   -(SS)]   ->(SP)
F   T   F   T
(T)   (T)   (F)

By assigning these truth-values to the variables in the argument, we have shown that this argument is invalid because we are able to assign consistent truth-values to each variable such that the premises are true while the conclusion is false; i.e., we have made the argument into a false conditional.

If the argument had been a valid logical form, such as Modus Ponens, Modus Tollens, or a Disjunctive Syllogism, we would not have been able to make the premises true while the conclusion was false. Let's see how such a test would work. The general argument form for Modus Ponens is as follows:

[(p -> q) & p] -> q

To prove that the argument is valid, we must attempt to assign consistent truth-values to the variables such that the conclusion (q) is false while the premises (p -> q) & p are both true.

1) In order for the conclusion (q) to be false, q must have a truth-value of F ("false").

```
[(p -> q)    &    (p)]   -> q
                            F
                           (F)
```

2) Hence, wherever q occurs in the argument form, we must assign a truth-value of F.

```
[(p -> q)    &    (p)]   -> q
       F                    F
                           (F)
```

3) Next, in order for the second premise (p) to be true, (p) must have a truth-value of T.

```
[(p -> q)    &    (p)]   -> q
       F           T        F
                  (T)      (F)
```

4) In order to be consistent, if p is true in the second premise (p), we must make p true in the first premise (p -> q).

```
[(p -> q)    &    (p)]   -> q
  T    F           T        F
   (F)            (T)      (F)
```

However, when we do that, we have made our first premise (p -> q) false, because all conditionals with true antecedents and false consequents are false.

Hence, we see that Modus Ponens is a valid form of reasoning because it is impossible to assign truth values consistently so that both premises are true while the conclusion is false. This form of argument is truth preserving in the highest sense: if we begin with true premises, it is impossible to have a false conclusion.

Exercise 4.4

A. Test the following general argument forms for validity. Remember that 1) a conjunction is true only if all parts are true, 2) a disjunction is false only if all parts are false, and 3) a conditional is false only when the antecedent is true while the consequent is false. An invalid argument is a false conditional statement in which the premises make up the antecedent and the conclusion is the consequent.

1. [(p v q) & p] -> -q

2. [(p v q) & -p] -> q

3. [(p -> q) & -q] -> -p

4. [(p -> q) & -p] -> -q

5. [(p -> q) & q] -> p

6. -(p -> q) -> -q

7. -(p -> q) -> p

8. [(p v q) & (p -> r) & -r] -> q

B. First, using letters and the truth-functional connectives (&, v, ->, and -), symbolize the statements in the following arguments. Then test the arguments for validity.

1. If I am in Kansas, then I am not in Colorado. I am not in Colorado. Hence, I am in Kansas.

2. If John studies or John gets lucky, then John will pass. John gets lucky. Hence, John passes.

3. Drinking milk is either healthy or not healthy. If drinking milk is healthy, then all calves are healthy. All calves are not healthy. Hence, drinking milk is not healthy.

4. Rock music is either the work of the devil or the work of the Lord. It is not the work of the Lord. Hence, it is the work of the devil.

4.5 More on Symbolizing Arguments

As we have seen, arguments in the form of either dilemmas (e.g., Disjunctive Syllogism) or conditional statements (e.g., Modus Ponens or Modus Tollens) can be easily symbolized and checked for validity. One obvious question is how we deal with arguments that are stated neither as dilemmas nor as conditional statements. For example, how would we symbolize the following argument?

p1. All mammals have hair. (MH)
p2. Socrates is a mammal. (SM)
C. Hence, Socrates has hair. (SH)

If we use the method of translation we have used thus far, we would transform the argument into (MH & SM) -> SH, which is clearly an invalid argument form, since the premises can easily be assigned the truth values of T and the conclusion F. On the other hand, we know intuitively that the argument is valid: if p1 and p2 are true, then so is the conclusion. Hence, we need to gain an even clearer understanding of such arguments.

The problem with symbolizing the first premise, "All mammals have hair," as MH is made apparent if we ask how, given our current techniques, we would symbolize the sentence "Some mammals have hair." That statement too would be symbolized as MH. Yet clearly, the two sentences have quite different meanings. For example, from the sentence, "All mammals have hair," we can infer that any instance of a mammal, e.g., Socrates, will also have hair. We cannot make such an inference from the sentence, "Some mammals have hair." From "Some mammals have hair" it does not follow that any particular mammal has hair. Hence, because of the difference in meaning, some way of distinguishing between the two claims must be developed.

We have two alternatives: We can either learn to translate sentences such as "All mammals have hair" into conditional statements, while leaving sentences beginning with "some" or "one" as they are, or we can develop a more sophisticated set of symbolic techniques. Developing a more sophisticated symbolic system is somewhat difficult because it involves what is called "quantification theory," an explanation of which is included as an appendix to this text. Such sophistication is not necessary for our purposes. Since we already understand the logic of conditional statements, we will take the easier course and translate sentences of the form "All mammals have hair" into their corresponding conditionals, while leaving those that begin with "some" or "one" as they are. Statements of the general form "All S are P" can be translated into conditionals that say, "If anything is an S, then it is a P." So, our premise "All mammals have hair" becomes, "If anything is a mammal, then it has hair." This can be symbolized as SM -> SH.

Such a premise makes claims about all members of the class named by the subject "All mammals." As a general rule of inference we see that if anything is true of all members of a class, then it will be true of each member of that class. (For a full explanation of such inferences, see the appendix that deals with quantification theory.) So, if it is true that "If something is a mammal, then it has hair," it follows that, if "Socrates is a mammal," then "Socrates will have hair."

In effect, we have turned the original argument

p1. All mammals have hair.
p2. Socrates is a mammal.
C. Socrates has hair.

into the following variation of a Modus Ponens inference

p1. If something is a mammal, then it has hair.
p2. Socrates is a mammal.
C. Socrates has hair.

Loosely speaking, the form of the argument is: [(P -> Q) & P] -> Q, where the difference between "something is a mammal" and "Socrates is a mammal" is ignored because whatever is true of anything that is a mammal will be true of Socrates who is a mammal.

Sentences that make universal negative claims can likewise be translated into a conditional format. For example, "No fish is a mammal" becomes "If something is a fish, then it is not a mammal."

Because we know how to evaluate arguments with conditional premises, it is important to construct and translate arguments into these familiar forms.

Exercise 4.5

A. Translate the following arguments into standard form and check for validity.

1. All communists read Marx.
   All college students read Marx.
   Hence, college students are communists.

2. All Greeks know Homer's epics.
   All English majors know Homer's epics.
   Hence, English majors are Greeks.

3. All critical thinkers know logic.
   All people who know logic are hard to fool.
   Hence, all critical thinkers are hard to fool.

4. All musical notes are mathematical.
   All music is made of musical notes.
   Hence, all music is mathematical.

5. All music is mathematical.
   All love songs are music.
   Hence, all love songs are mathematical.

4.6 Implications for Critical Thinkers

When we have shown that an argument is either valid or invalid, what have we shown?

First, to show that an argument is invalid is to show that the premises given in support of a conclusion can be accepted as true without our being forced to accept the conclusion. As our method for proving invalidity shows, the premises could all be true while the conclusion is false.

Second, if we show that an argument is formally valid, we know that if the premises are accepted as true, then we must accept the conclusion because in valid arguments the truth of the premises is always transferred to the conclusion.

Third, given our understanding of validity, we know that if an argument is valid but the conclusion makes a claim that we know to be false or highly questionable, then we can be sure that at least one of the premises is false or highly questionable. If all premises were in fact true or acceptable and the argument valid, then it would be impossible for the conclusion to be false.

Fourth, our notion of validity tells us that if one accepts a conclusion, then one must also accept whatever premises are necessary in order to imply the truth of the premises. For example, if I accept a conclusion (q) and the only way to support (q) is to accept the premises (p -> q) and (p), then I must accept the truth of those premises.

In Chapter Three, we distinguished between formal arguments that had easily identifiable major and minor premises and more informal arguments and enthymemes where reasons were given to support a conclusion, but the reasons did not formally entail the conclusion. We should be aware that people who present arguments usually do not present their positions in the form of formal deductive arguments. Sometimes it is possible to reconstruct their arguments so that the missing premises needed for a formal argument are made evident. Sometimes, however, the best we can do is list the author's reasons for the position and ask ourselves whether these reasons, if accepted, would warrant the conclusion. While this may not be the most rigorous way of evaluating arguments, sometimes it is all that we can do. Formal deductive logic provides us with a model for correct inferences, but in reality the model is often not followed.

Glossary

Antecedent: The part of a conditional statement that follows the if and precedes the then.

Bi-conditional: (<- ->) A conditional statement where the truth-values of the antecedent and consequent always coincide.

Complex Sentence: Any sentence composed of propositions and logical connectives.

Conditional Statement: An if/then statement comprised of an antecedent and consequent. For the purposes of deductive logic, conditionals have a truth-value of F if and only if the antecedent is true and the consequent false.

Conjunction: Compound sentence with propositions joined by and (&).

Consequent: The part of a conditional statement following the then.

Deductive Reasoning: Reasoning that assumes the truth of premises and then infers what follows. Deductive reasoning is hypothetical insofar as it tells us what would be the case if we assume certain premises.

Disjunction: Compound sentence with propositions joined by or (v). Disjunctions are false only if all parts are false.

Disjunctive Syllogism: Any deductive inference of the form {[(p v q) & -p] -> q}.

Logical Connective: Any of the four connectives (&, v, ->, -) used to join propositions to make complex sentences.

Logical Contradiction: A compound sentence that regardless of the truth-value of the parts, it is always false. Sentences of the form (p & -p) are logical contradictions.

Logical Form: The general form or pattern of an argument once it has been symbolized. A valid logical form is one where it is impossible to assign truth-values such that the premises are true and the conclusion false.

Modus Ponens: Valid deductive inference of the form {[(p -> q) & p] -> q}.

Modus Tollens: Valid deductive inference of the form {[(p -> q) & -q] -> -p}.

Proposition: A term used to define simple sentences that are joined with truth functional connectives to form compound sentences.

Valid Deductive Argument: Arguments of such a form that it is impossible to have true premises and a false conclusion.

Reading Assignment

Read the Federalist Paper #10. Summarize the argument. and then try to symbolize its general structure. Then check it for validity.

THE FEDERALIST NO. 10 *

James Madison

To the People of the State of New York:

Among the numerous advantages promised by a well-constructed Union, none deserves to be more accurately developed than its tendency to break and control the violence of faction. The friend of popular governments never finds himself so much alarmed for their character and fate, as when he contemplates their propensity to this dangerous vice. He will not fail, therefore, to set a due value on any plan which, without violating the principles to which he is attached, provides a proper cure for it. The instability, injustice, and confusion introduced into the public councils, have, in truth, been the mortal diseases under which popular governments have everywhere perished; as they continue to be the favorite and fruitful topics from which the adversaries to liberty derive their most specious declamations. The valuable improvements made by the American constitutions on the popular models, both ancient and modern, cannot certainly be too much admired; but it would be an unwarrantable partiality, to contend that they have as effectually obviated the danger on this side, as was wished and expected. Complaints are everywhere heard from our most considerate and virtuous citizens, equally the friends of public and private faith, and of public and personal liberty, that our governments are too unstable, that the public good is disregarded in the conflicts of rival parties, and that measures are too often decided, not according to the rules of justice and the rights of the minor party, but by the superior force of an interested and overbearing majority. However anxiously we may wish that these com-

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* James Madison, The Federalist Papers, Ed. Henry Steele Commager (New York: Appleton-Century-Crofts, Inc., 1949).

plaints had no foundation, the evidence of known facts will not permit us to deny that they are in some degree true. It will be found, indeed, on a candid review of our situation, that some of the distresses under which we labor have been erroneously charged on the operation of our governments; but it will be found, at the same time, that other causes will not alone account for many of our heaviest misfortunes; and, particularly, for that prevailing and increasing distrust of public engagements, and alarm for private rights, which are echoed from one end of the continent to the other. These must be chiefly, if not wholly, effects of the unsteadiness and injustice with which a factious spirit has tainted our public administrations.

By a faction, I understand a number of citizens, whether amounting to a majority or minority of the whole, who are united and actuated by some common impulse of passion, or of interest, adverse to the rights of other citizens, or to the permanent and aggregate interests of the community.

There are two methods of curing the mischiefs of faction: the one, by removing its causes; the other, by controlling its effects.

There are again two methods of removing the causes of faction: the one, by destroying the liberty which is essential to its existence; the other, by giving to every citizen the same opinions, the same passions, and the same interests.

It could never be more truly said than of the first remedy, that it was worse than the disease. Liberty is to faction what air is to fire, an aliment without which it instantly expires. But it could not be less folly to abolish liberty, which is essential to political life, because it nourishes faction, than it would be to wish the annihilation of air, which is essential to animal life, because it imparts to fire its destructive agency.

The second expedient is as impracticable as the first would be unwise. As long as the reason of man continues fallible, and he is at liberty to exercise it, different opinions will be formed. As long as the connection subsists between his reason and his self-love, his opinions and his passions will have a reciprocal influence on each other; and the former will be objects to which the latter will attach themselves. The diversity in the faculties of men, from which the rights of property originate, is not less an insuperable obstacle to a uniformity of interests. The protection of these faculties is the first object of government. From the protection of different and unequal faculties of acquiring property, the possession of different degrees and kinds of property immediately results; and from the influence of these on the sentiments and views of the respective proprietors, ensues a division of the society into different interests and parties.

The latent causes of faction are thus sown in the nature of man; and we see them everywhere brought into different degrees of activity, according to the different circumstances of civil society. A zeal for different opinions concerning religion, concerning government, and many other points, as well of speculation as of practice; an attachment to different leaders ambitiously contending for pre-eminence and power; or to persons of other descriptions whose fortunes have been interesting to the human passions, have, in turn, divided mankind into parties, inflamed them with mutual animosity, and rendered them much more disposed to vex and oppress each other than to co-operate for their common good. So strong is this propensity of mankind to fall into mutual animosities, that where no substantial occasion presents itself, the most frivolous and fanciful distinctions have been sufficient to kindle their unfriendly passions and excite their most violent conflicts. But the most common and durable source of factions has been the various and unequal distribution of property. Those who hold and those who are without property have ever formed distinct interests in society. Those who are creditors, and those who are debtors, fall under a like discrimination. A landed interest, a manufacturing interest, a mercantile interest, a moneyed interest, with many lesser interests, grow up of necessity in civilized nations, and divide them into different classes, actuated by different sentiments and views. The regulation of these various and interfering interests forms the principal task of modern legislation, and involves the spirit of party and faction in the necessary and ordinary operations of the government.

No man is allowed to be a judge in his own cause, because his interest would certainly bias his judgment, and, not improbably, corrupt his integrity. With equal, nay with greater reason, a body of men are unfit to be both judges and parties at the same time; yet what are many of the most important acts of legislation, but so many judicial determinations, not indeed concerning the rights of single persons, but concerning the rights of large bodies of citizens? And what are the different classes of legislators but advocates and parties to the causes which they determine? Is a law proposed concerning private debts? It is a question to which the creditors are parties on one side and the debtors on the other. Justice ought to hold the balance between them. Yet the parties are, and must be, themselves the judges; and the most numerous party, or, in other words, the most powerful faction must be expected to prevail. Shall domestic manufactures be encouraged, and in what degree, by restrictions on foreign manufactures? are questions which would be differently decided by the landed and the manufacturing classes, and probably by neither with sole regard to justice and the public good. The apportionment of taxes on the various descriptions of property is an act which seems to require the most exact impartiality; yet there is, perhaps, no legislative act in which greater opportunity and temptation are given to a predominant party to trample on the rules of justice. Every shilling with which they overburden the inferior number, is a shilling saved to their own pockets.

It is in vain to say that enlightened statesmen will be able to adjust these clashing interests, and render them all subservient to the public good. Enlightened statesmen will not always be at the helm. Nor, in many cases, can such an adjustment be made at all without taking into view indirect and remote considerations, which will rarely prevail over the immediate interest which one party may find in disregarding the rights of another or the good of the whole.

The inference to which we are brought is, that the causes of faction cannot be removed, and that relief is only to be sought in the means of controlling its effects.

If a faction consists of less than a majority, relief is supplied by the republican principle, which enables the majority to defeat its sinister views by regular vote. It may clog the administration, it may convulse the society; but it will be unable to execute and mask its violence under the forms of the Constitution. When a majority is included in a faction, the form of popular government, on the other hand, enables it to sacrifice to its ruling passion or interest both the public good and the rights of other citizens. To secure the public good and private rights against the danger of such a faction, and at the same time to preserve the spirit and the form of popular government, is then the great object to which our inquiries are directed. Let me add that it is the great desideratum by which this form of government can be rescued from the opprobrium under which it has so long labored, and be recommended to the esteem and adoption of mankind.

By what means is this object attainable? Evidently by one of two only. Either the existence of the same passion or interest in a majority at the same time must be prevented, or the majority, having such coexistent passion or interest, must be rendered, by their number and local situation, unable to concert and carry into effect schemes of oppression. If the impulse and the opportunity be suffered to coincide, we well know that neither moral nor religious motives can be relied on as an adequate control. They are not found to be such on the injustice and violence of individuals, and lose their efficacy in proportion to the number combined together, that is, in proportion as their efficacy becomes needful.

From this view of the subject it may be concluded that a pure democracy, by which I mean a society consisting of a small number of citizens, who assemble and administer the government in person, can admit of no cure for the mischiefs of faction. A common passion or interest will, in almost every case, be felt by a majority of the whole; a communication and concert result from the form of government itself; and there is nothing to check the inducements to sacrifice the weaker party or an obnoxious individual. Hence it is that such democracies have ever been spectacles of turbulence and contention; have ever been found incompatible with personal security or the rights of property; and have in general been as short in their lives as they have been violent in their deaths. Theoretic politicians, who have patronized this species of government, have erroneously supposed that by reducing mankind to a perfect equality in their political rights, they would, at the same time, be perfectly equalized and assimilated in their possessions, their opinions, and their passions.

A republic, by which I mean a government in which the scheme of representation takes place, opens a different prospect, and promises the cure for which we are seeking. Let us examine the points in which it varies from pure democracy, and we shall comprehend both the nature of the cure and the efficacy which it must derive from the Union.

The two great points of difference between a democracy and a republic are: first, the delegation of the government, in the latter, to a small number of citizens elected by the rest; secondly, the greater number of citizens, and greater sphere of country, over which the latter may be extended.

The effect of the first difference is, on the one hand, to refine and enlarge the public views, by passing them through the medium of a chosen body of citizens, whose wisdom may best discern the true interest of their country, and whose patriotism and love of justice will be least likely to sacrifice it to temporary or partial considerations. Under such a regulation, it may well happen that the public voice, pronounced by the representatives of the people, will be more consonant to the public good than if pronounced by the people themselves, convened for that purpose. On the other hand, the effect may be inverted. Men of factious tempers, of local prejudices, or of sinister designs, may, by intrigue, by corruption, or by other means, first obtain the suffrages, and then betray the interest, of the people. The question resulting is, whether small or extensive republics are more favorable to the election of proper guardians of the public weal; and it is clearly decided in favor of the latter by two obvious considerations:

In the first place, it is to be remarked that, however small the republic may be, the representatives must be raised to a certain number, in order to guard against the cabals of a few; and that, however large it may be, they must be limited to certain number, in order to guard against the confusion of a multitude. Hence, the number of representatives in the two cases not being in proportion to that of the two constituents, and being proportionally greater in the small republic, it follows that, if the proportion of fit characters be not less in the large than in the small republic, the former will present a greater option, and consequently a greater probability of a fit choice.

In the next place, as each representative will be chosen by a greater number of citizens in the large than in the small republic, it will be more difficult for unworthy candidates to practice with success the vicious arts by which elections are too often carried; and the suffrages of the people being more free, will be more likely to centre in men who possess the most attractive merit and the most diffusive and established characters.

It must be confessed that in this, as in most other cases, there is a mean, on both sides of which inconveniences will be found to lie. By enlarging too much the number of electors, you render the representatives too little acquainted with all their local circumstances and lesser interests, as by reducing it too much, you render him unduly attached to these, and too little fit to comprehend and pursue great and national objects. The federal Constitution forms a happy combination in this respect; the great and aggregate interests being referred to the national, the local and particular to the State legislatures.

The other point of difference is, the greater number of citizens and extent of territory which may be brought within the compass of republican than of democratic government; and it is this circumstance principally which renders factious combinations less to be dreaded in the former than in the latter. The smaller the society, the fewer probably will be the distinct parties and interests composing it; the fewer the distinct parties and interests, the more frequently will a majority be found of the same party; and the smaller the number of individuals composing a majority, and the smaller the compass within which they are placed, the more easily will they concert and execute their plans of oppression. Extend the sphere, and you take in a greater variety of parties and interests; you make it less probable that a majority of the whole will have a common motive to invade the rights of other citizens; of if such a common motive exists, it will be more difficult for all who feel it to discover their own strength, and to act in unison with each other. Besides other impediments, it may be remarked that, where there is a consciousness of unjust or dishonorable purposes, communication is always checked by distrust in proportion to the number whose concurrence is necessary.

Hence, it clearly appears, that the same advantage which a republic has over democracy, in controlling the effects of faction, is enjoyed by a large over a small republic,--is enjoyed by the Union over the States composing it. Does the advantage consist in the substitution of representatives whose enlightened views and virtuous sentiments render them superior to local prejudices and to schemes of injustice? It will not be denied that the representation of the Union will be most likely to possess these requisite endowments. Does it consist in the greater security afforded by a greater variety of parties, against the event of any one party being able to outnumber and oppress the rest? In an equal degree does the increased variety of parties comprised within the Union, increase this security. Does it, in fine, consist in the greater obstacles opposed to the concert and accomplishment of the secret wishes of an unjust and interested majority? Here, again, the extent of the Union gives it the most palpable advantage.

The influence of factious leaders may kindle a flame within their particular States, but will be unable to spread a general conflagration through the other States. A religious sect may degenerate into a political faction in a part of the Confederacy; but the variety of sects dispersed over the entire face of it must secure the national councils against any danger from that source. A rage for paper money, for an abolition of debts, for an equal division of property, or for any other improper or wicked project, will be less apt to pervade the whole body of the Union than a particular member of it; in the same proportion as such a malady is more likely to taint a particular country or district, than an entire State.

In the extent and proper structure of the Union, therefore, we behold a republican remedy for the disease most incident to republican government. And according to the degree of pleasure and pride we feel in being republicans, ought to be our zeal in cherishing the spirit and supporting the character of Federalists.

Publius

Chapter Five
Inductive Logic

> Our own doctrine is that not all knowledge is demonstrative. On the contrary, knowledge of immediate premises is independent of demonstration. The necessity of this is obvious; for since we must know the prior premises from which demonstration is drawn, and since the regress must end in immediate truths, those truths must be indemonstrable.
>
> Aristotle, *Posterior Analytics*

5.1 Introduction and Review

In evaluating the strength of arguments, once we are clear on what is being claimed, there are two basic questions we can ask: first, is the argument valid, and second, given that the argument is valid, do we have good reasons to accept the premises? In many cases, the answers to each of these questions are provided by two different sorts of reasoning: deductive reasoning, with which we are now familiar, and inductive reasoning, which we are about to study. How is it that these two kinds of reasoning are related to the two primary questions for evaluating arguments?

Let us return to the notion of deduction. We can more easily understand inductive reasoning by first thinking about deductive reasoning. First, deductive reasoning is at once certain and yet hypothetical. Its certainty lies in our ability to check deductive arguments for validity. Using relatively simple mechanical methods, we can determine with certainty whether or not an argument is valid. In checking a argument's validity, we focus on its formal characteristics, i.e., its logical form. We **have seen that all valid deductive arguments are of such a form that *if* the premises have a truth-value of true, then the conclusion *cannot* have a truth-value of false.** Deductive reasoning is hypothetical in that we assume that the premises are true, and then see what follows or what is implied by their hypothetical acceptance. That is why we said deductive inferences should be thought of as conditional statements. Deduction tells us what would follow if we assume the premises are true, not whether our assumptions are in fact reasonable.

One reason why a valid argument always transfers the truth-value of true premises to the conclusion is that there is no independent proposition asserted as true in the conclusion that is not already asserted as true or contained in the premises. The conclusions of deductive inferences do not go beyond what is already given in the premises. Even in the valid deductive inference [p -> (p v q)], the proposition represented by "q" is not asserted to be true either in the premise or in the conclusion. This is a distinguishing feature of *valid deductive reasoning*: what is asserted to be true in the conclusion follows from the premises because it is already implicit or contained in the premises. That is to say, the conclusion of a valid deductive argument does not go beyond what is already given or warranted by the premises. As we shall see, the conclusions of inductive inferences always make stronger claims than are strictly warranted by the premises. Their conclusions go beyond what is given in the premises. This is a significant difference.

A second quality of deductive inferences is their level of certainty. Deductive inferences are certain. So, if we accept the premises of a valid deductive argument, we are compelled to accept whatever is deductively implied by or implicit in those premises. For example, all of the truths in a Euclidean geometry text, the epitome of deductive reasoning, are *implied by* in the definitions, axioms, and postulates given in the first few pages. If we accept the initial axioms and postulates, then we must also accept the rest of the text. Each chapter is but the deductive "unpacking" of the relationships implicit in those early definitions. Hence, the knowledge gained through deduction is not knowledge of the truth of some independent proposition (p, q, r,...); rather it is knowledge entailed by the conditional acceptance or denial of certain propositions. In addition, as the history of geometry shows, if one changes any of the axioms or postulates, an entirely different set of truths follows, e.g., non-Euclidean geometries. So, while we must accept what is deductively entailed by a given set of premises, if we alter the premises, what is entailed is altered also. As we shall see, in inductive reasoning we are not compelled to accept what appears to follow from the premises. The premises could be true, and the conclusion false.

Finally, we have seen that deductive reasoning must begin with premises that we accept as being conditionally true; hence, as the quote from Aristotle at the chapter's beginning suggested, we cannot determine the actual truth or acceptability of the premises by deduction. Deduction tells us what would follow if the premises were true, but not whether they are either true or acceptable. Even in those cases in which the truth of the premises can be derived deductively from other, more basic premises, the problem of premise acceptability is only postponed. We must ask then how we can know whether these more basic premises are themselves acceptable.

As we begin our discussion of premise adequacy, we should remember that because critical thinkers are committed to the Fallibility Principle, it is more accurate to speak of premises as being "acceptable" or "unacceptable," rather than "true" or "false." While we all like to begin our reasoning with true premises, we cannot know with absolute certainty whether a belief is in fact true. Hence, it is best to think of "true" premises as those that would be acceptable to a community of honest inquirers. So, even though for the sake of checking an argument's validity we assign truth-values of T or F, when we evaluate the acceptability of the premises we will refrain from calling them true or false.

There are many approaches to determining the acceptability of premises. For the most part, the methods and arguments are more informal, and they rely on inductive logic. To support our premises we take polls, present historical evidence, cite authorities, appeal to personal experience, and formulate rather complex scientific experiments. Because the methodology for determining premise adequacy is so varied, it is not as clear as that for determining validity. Hence, determining the rationality or reasonableness of a claim is often problematic. For valid deductive arguments, we know that it is rational to accept their conclusion *if* we have first accepted the premises, but when is it reasonable to accept what is claimed in a premise? When should we believe, and when should we be skeptical?

When studying inductive logic, the first thing we should keep in mind is that while valid *deductive arguments* never make claims in the conclusion that are not already in the premises, the conclusions of *inductive arguments* do make claims that are not in the premises. In other words, the premises of inductive arguments do not *entail* (in the strict deductive sense) the truth of the conclusion. Because of this, the certainty we have in deductive reasoning that a set of premises entails the conclusion is absent in inductive arguments. The best we can hope for in inductive reasoning is that if our premises are true, it is highly probable that the conclusion will also be true. Because of this, we should treat claims that are inductively derived with a bit of healthy skepticism. Furthermore, because in most instances it is through inductive methods that we establish the premises from which we reason deductively, while we can be certain about the "truth-preserving quality" of deduction, we cannot have such certainty with the inductively derived premises. Some basic premises, of course, are simply definitions, such as "Bachelors are unmarried males" or "Triangles have three sides" and are necessarily true, but these are not inductively derived. Even if we have a valid deductive argument, because its conclusion is derived from uncertain premises, we cannot be certain that the conclusion is true. So, while we can be certain about the **process** of deductive inference, we cannot be certain about the factual claims made in the conclusion. In fact, **the degree of certainty of any conclusion can never be any greater than the degree of certainty of the least certain premise.** Hence, the Fallibility Principle that has played such an important role in guiding critical thinkers is in fact based on the nature of reasoning and the uncertainty we have with inductively derived premises.

5.2 On the Methods of Induction

Given the important role that induction plays in our reasoning, let's see how the process works. At the simplest level, to think inductively is completely natural to the workings of the human mind. When we generalize from our experiences, we are thinking inductively. For example, when we infer that because a number of observed entities or events, commonly called the reference class, exemplify a specific property, and hence the entire class of such entities also has the property, we are thinking inductively. Consider the inference "Socrates was mortal because all humans are mortal and Socrates was human." Imagine then some skeptic who might ask how we know that "All humans are mortal." Our skeptic might ask, "Have we experienced the death of all humans? Of course, we have not. And, if not, how do we know that all humans are mortal?" The justification for the major premise that "All humans are mortal" is really an inductive generalization based on our past experience of the reference class of some humans. From experiencing the birth and death of *some* humans, we infer that *all* humans are mortal. We believe that because humans in the past (as far as we know) have been mortal, future humans also will be mortal. Stated more formally, such reasoning assumes that the properties of those entities in the reference class (humans we have experienced) are present in the class as a whole (all humans), even though the whole has not been experienced.

From this example of inductive generalization, we can see why inductive reasoning yields conclusions that are at best highly probable. We can never be certain that an entire class of things has the same property that only some have. And furthermore, we can never experience the entire class of things because we are limited by time; that is, we cannot experience the distant past or distant future. Hence, for any such inductive generalization, there may be counter-examples.

The same pattern of reasoning is used in polls and statistical studies. Suppose that 51 percent of the students polled this year at Midwest U. have been Republicans. The pollsters might be inclined to conclude that 51 percent of all students are Republicans. The pollsters assume that the reference class of polled students at Midwest U. is representative of the class of all students. They assume that the distribution of Republicans at Midwest U. is the same as the distribution in the class of all students. These assumptions, however, may not be the case. Students at Midwest U. may not be representative of all students.

Let us take another example of inductive generalization that is even more troublesome and far more significant. Aristotle observed the women in Greece at his time and noticed that they appeared to be passive, emotional, and lacking in certain rational capacities.[1] He then generalized from that experience and concluded that "All women are passive, emotional, and lacking certain rational capacities." Aristotle's reasoning shows how inductive generalization works and at the same time indicates its hazards. While Aristotle's conclusions about the nature of women are obviously false, in the history of Western culture this fallacious inductive generalization became the major premise in the arguments that attempted to justify the oppression and unfair treatment of women. Aristotle argued that *if* women were by nature emotional and lacked rational capacities, *then* there was no need to try to educate them. As a consequence persons lacking in rational capacities should not be involved in the world of business or politics. They were to remain home, raise children, and be subservient to their husbands. How is it that Aristotle, the founder of formal logic, made such a blunder? Was he simply prejudiced, or did he make errors in reasoning which led to his prejudice?

We should remember that unlike deduction, all inductive arguments make claims in their conclusions that exceed what is warranted in their premises. The first area we must examine in order to distinguish good inductive arguments from bad ones is how far the claims made in the conclusion exceed what is warranted in the premises. In Aristotle's case, after observing *some* women in his culture, he concluded that "*all* women are overly emotional and lack certain rational capacities." The conclusion makes a *universal* claim about the nature of "the class of all women." When we translate such a universal statement to its corresponding conditional, we get "If a person is a female, then that person is overly emotional and is lacking in certain rational capacities." But the premises in support of this universal claim are observation statements about a fairly small class of women, i.e., those Aristotle had observed in the area of Athens. Aristotle, like the pollsters at Midwest U., assumed that his reference class was representative of the entire class of women, but given the size of the entire class, we can certainly question the strength of his inference.

Recognizing such assumptions can help us to minimize their effects on the reasoning process. Inductive generalizations assume that the cases that have been examined are representative of the entire class; i.e., inductive reasoning assumes that the sample or reference class exhibits evenly distributed qualities or that "nature is uniform." We can never know, of course, that nature is uniform. To minimize the effect of such an assumption, we must always ask whether the reference class was indeed representative of the entire class. Were women in Aristotle's Athens representative of all women? Were the students at Midwest U. representative of all students? Were there perhaps relevant differences? We know that some properties which are present in some members of a class are absent in other members; e.g., being right-handed is present in some humans, but not all humans. If all properties were distributed equally, scientists would have no need to observe nature carefully in order to discover where in fact there are uniformities and where there are important differences. So, all inductive inferences which move from a finite number of observation statements to conclusions which make universal claims about the entire class are enthymematic. They assume the hidden premise: the distribution of properties in the sample is indicative of the distribution in the entire class. Such an assumption lies at the heart of all poll taking and surveys. This assumed premise, however, can never be proven. Hence, the conclusion of such inductive arguments does not follow necessarily from the premises because the scope of the conclusion (all of nature) is much broader than the scope of the premises (nature observed), and the certainty of one of the assumed premises (that nature is uniform) is itself questionable. At best, if a person has generalized from many careful observations, the truth of the conclusion could be only highly probable. We should always recognize that there could be counter-examples. Our certainty is always relative to the evidence we have acquired, and that is limited.

A third area that is important for evaluating the strength of inductive generalizations has to do with the limits of basing one's conclusions on observation alone. Observation, by itself, proves very little. When Aristotle observed the women of ancient Athens, he concluded that the properties or qualities they exhibited (being overly emotional and lacking rationality) were natural properties that always correlated with being female and not simply a product of the culture. This distinction is important because natural properties cannot be easily changed, while properties that are contingent upon culture or *nurture* certainly can. But how, by simple observation, could Aristotle have known which kind of property he was observing? It could well have been true that women at that time appeared to lack rational capacities and to be highly emotional, but it does not follow from such observations that those qualities always correlated with the genetic make-up of being female. Aristotle just as easily could have concluded that those traits were a function of how women at that time were raised, the sorts of lives they led, or their oppression by men. But observation alone could not have told him which it was. To find out, he would have had to devise controlled experiments to see whether the observed behavior traits were a function of culture and lack of education or a function of genetic make-up.

So, while induction begins with observations, generalization from such experience is not the end of the process. Whenever possible, we must employ ways of testing the claims based upon such experiences. Without such tests, observations can lead us to false conclusions no less disastrous than Aristotle's views on women and their proper role in society.

How is it, then, that critical thinkers can avoid such problems and yet employ the necessary inductive reasoning to arrive at acceptable premises? The degree of probability or inductive strength of a claim depends upon many things.

First, some inductive investigations such as polls and surveys do not lend themselves to experimentation. In those cases, the inductive strength of a conclusion depends on the number and kind of the observations. The probability of a claim tends to be lower if it is based on a small sample relative to the size and heterogeneity of the entire class. So, if the entire class contains a large number of things which display significant differences, then the sample observations must be large. If the entire class is small and fairly homogeneous, then the sample need not be so large. In the previous example, even if we assume that Aristotle were not biased in his observations, the inductive strength of his claim about women's nature would be very low simply because he did not observe very many women compared to the class of "all women." Aristotle was guilty of what is often called hasty generalization. In addition, as we have just seen, Aristotle's sample of women (those who lived in a culture that denied women the right to be educated) was not representative. The class of women is a heterogeneous class. We should always remember that if persons of a particular class such as race, sex, religion, age, etc. within a specific culture are systematically denied the right to develop and exercise a capacity, they will soon appear not to possess that capacity. So, if women in Aristotle's Greece were not allowed an education, it is not surprising that they appeared to be lacking in those capacities typically developed through education.

Secondly, claims based on observations alone can be weak because of observer bias or prejudice. We know from psychological experiments that human observations tend to be biased, prejudiced, or tainted by the point of view or values of the observer. In other words, we often "see" what we want to see, or we find only what we seek. Figure-ground experiments in Gestalt psychology illustrate this point. In one famous example, whether we see a vase or two human profiles facing each other depends on our intentions or way of looking at the phenomenon. Aware of such problems with human observation and their ramifications for inductive reasoning, Francis Bacon urged seventeenth-century scientists to become conscious of such biases and inborn tendencies. He believed that through understanding their tendency towards specific biases, scientists could become much more objective in their observations -- to "cleanse the lenses of perception," so to speak. Scientists have suggested that one way to illuminate our observational prejudices, biases, and assumptions is to form self-critical communities of inquirers. Within such communities, studies based on observation should be repeated by as many independent observers as possible. Individual biases become apparent when different observers report different things.

The strongest inductively-based claims are those that go beyond observations and involve rigorous testing. Whenever possible, generalizations based on repeated and careful observations should be treated as hypotheses rather than reasoned conclusions. These hypotheses should then be tested by controlled experiments. (The methodology of such experiments will be explained shortly.) In order to minimize bias, these experiments, like observations, should be conducted independently by "the community of inquirers." Acceptable hypotheses or generalizations will be those that stand up to continued testing and those whose results are repeatable.

Ironically, even controlled scientific experimentation makes assumptions. First, it assumes what is called "the principle of the uniformity of nature." For example, scientists assume that the results of an experiment run one day will be the same as those run another day. They assume that the same conditions always create the same results. Because of our limited experience, we can never know if this is true. Nature may not be uniform.

Another limitation is the logic of experimentation. Given our knowledge of deductive logic, we can see why experiments whose consequences seem to verify the hypothesis can never prove with certainty that any hypothesis or inductive generalization is *true*. Let's assume that we have some hypothesis (H) and that we reason that *if* indeed H is true, *then* certain observable consequences (C) will follow -- (H -> C). Suppose we run experiment after experiment and find that indeed the expected consequence (C) does occur. Does such reasoning warrant the inference that our hypothesis (H) is true? Obviously not. The reason is that {[(H -> C) & C] -> H} is an invalid form of reasoning -- commonly called the Fallacy of Affirming the Consequent. It is possible for the premises to be true while the conclusion is false just in that case where the truth-value of H is false and C is true.

So, while well-tested scientific theories are often considered the paradigm of human knowledge, the recognition of such problems with induction has led most scientists to argue that because scientific theories are based on inductive reasoning and insufficient evidence, they should never be treated as certain. Instead, scientific theories are seen as tentative explanations, always subject to rejection or revision in light of new evidence.

We adopt inductively-derived claims as tentative hypotheses until they are *disconfirmed by counter-examples* or displaced by some better explanation. While careful observation might lead the scientist to form a hypothesis, the hypothesis must then be tested by controlled experiments which seek to *disconfirm* or falsify the hypothesis. The method of experimentation is often as follows: If a hypothesis is assumed to be true, then certain observable consequences will follow. (A claim from which no consequence followed--either observable or logical--could hardly be evaluated.) Upon experimentation, if the predicted consequences do not follow, the hypothesis (or perhaps other assumptions) is rejected. The form of such reasoning is our familiar argument form, *Modus Tollens*: {[(p -> q) & -q] -> -p}.

In our example of Aristotle's claims about the nature of women, we can say that Aristotle should have tried to falsify his hypothesis by running an experiment to determine whether or not being female was indeed the cause of being irrational and lacking emotional control. He should have tried to educate a group of Athenian females. *If* women are indeed by their very nature overly emotional and irrational, *then* it should follow that education has no effect on their behavior. Hence, his hypothesis that "All women are irrational" could be justified *if and only if*, after undertaking many educational experiments, females who were raised and educated like males still behaved the same way as those females who were not educated. If, on the other hand, the women who were educated could master the material and did change their behaviors, then he would have had to give up his theory that women were by nature lacking in rational capacities and overly emotional.

Such an experiment is called a controlled experiment. Controlled experiments make it possible to determine whether one thing is causally related to another. If we believe that x is the cause of y, we should see if the presence of x always corresponds to the presence of y and, more importantly, if x is withheld, whether y still occurs. If y occurs without x, then x is probably not causally related to y.

It is important to see that while one can usually find confirmation instances of any hypothesis, confirmation instances prove nothing without experimentation. As Francis

Bacon said, "Proof by enumeration is not a proof." Only through a controlled experiment do we gain strong evidence for the acceptability of a hypothesis. Yet even here we find an element of uncertainty. Nature may, in fact, not be uniform. It is possible, given further experimentation, that our accepted "laws of nature," which the very process of experimentation assumes, may be refined or rejected.

To think inductively is part of our human nature. We learn quickly from experience. We seem inclined to jump quickly from very limited observations to universal generalizations. This capacity to learn quickly from experience has been helpful in humanity's struggle for existence. Nonetheless, while this propensity is valuable to the species, it is, as we pointed out in Chapter One, also the foundation of many social problems that are based on prejudices and stereotyping. Consequently, the same faculty which is the foundation of all of our reasoning processes, the ability to generalize from experience and discover certain formal patterns and similarities in our world, is also the source of many of the social evils which tend to destroy the civil order.

Hence, because we are disposed to make hasty generalizations, and because we can never be sure that our inductive generalizations are true, we must exercise extreme care when we reason inductively. We must, whenever possible, employ those methods by which we can achieve a high degree of certainty. We must train ourselves to withhold judgment until we have examined a sufficiently representative number from the class of things in question. We must try to rid ourselves of prejudices that distort our observations. When possible, we should involve outside observers or "the community of inquirers" in testing our hypothesis. Finally, whenever possible, we must try to disconfirm our hypotheses through controlled experimentation. If after such careful procedures our hunches have not been proven wrong, it seems rational to accept them.

5.3 The Logic of Necessary and Sufficient Conditions

Because testing a hypothesis through controlled experimentation is so important, let's look more closely at the logic that underlies the process. Let's imagine that we procede as Aristotle did and that after some experience we have a hunch that "women are by nature lacking in certain rational capacities and overly emotional." Now, if we hold this belief, what we are really saying is that we believe there is some kind of causal relation between *being a woman* and *being irrational.* That is to say, whenever the property of "being a woman" occurs, we believe the property of "being irrational" will also occur and that there is something about "being a woman" that causes irrationality. In more formal language, we believe that "being a woman" is a *sufficient condition* for "being irrational." A *sufficient condition* is defined in the following way: given any p and q, p is a *sufficient condition* for q *if* whenever p occurs, q occurs. The presence of p is sufficient for the presence of q. If p is a sufficient condition for q, p implies q. For example, being exposed to a high level of radiation is a sufficient condition for death. So whenever a person is exposed to a high level of radiation, that person dies.

The converse of a sufficient condition is a *necessary condition*. Necessary conditions are defined as follows: given any p and q, p is the *necessary condition* of q if whenever p is absent, q is absent. That is to say, p's presence is necessary for q's, so when p is absent, q is absent. For example, we understand that being enrolled is a necessary condition for passing a course. If one does not enroll, one cannot pass. Being enrolled, however, as some have learned, is not a sufficient condition for passing. Sufficient conditions are defined in terms of *presence*; necessary conditions are defined in terms of *absence*.

The logic of sufficient conditions resembles *Modus Ponens*, while the logic of necessary conditions is like *Modus Tollens*. For example, if p is a sufficient condition for q and if p occurs, then q will occur: {[(p -> q) & p] -> q}. Conversely, if q is a necessary condition for p, and q is absent, then p is absent: {[(p -> q) & -q] -> -p}. To put the relationship another way, whenever any event (p) occurs, we know that the conditions (q) necessary for the event must also occur. To negate a necessary condition (-q) is to negate the event (-p).

Such reasoning provides us with powerful tools for discovering what we believe to be strict causal relationships. If whenever a certain set of conditions (a & b & c) is present another event x also occurs, we hypothesize that the combination (a & b & c) is the sufficient condition for or cause of x. If we want to eliminate x, we then hope that elements of the sufficient condition are also necessary conditions. If they are, then it should be possible to eliminate any one of these necessary conditions (a, b, or c) and prevent x from occurring. That is, if the conjunction (a & b & c) together provides necessary and sufficient conditions for x, then the elimination of either a, b, or c should eliminate x. For example, if fuel, oxygen, and a spark form a sufficient condition for fire, and each is also a necessary condition, then the elimination of either fuel, oxygen, or a spark will eliminate fire. So, to prevent event x from occurring, we need only to eliminate any one of its necessary conditions. As we can imagine, such reasoning is extremely useful for scientists who seek the causes of disease. If they can discover and eliminate a necessary condition for any specific disease, they can control the disease--assuming of course that the condition necessary for the disease is not necessary for life.

Let us return to our example of Aristotle's fallacious reasoning about women. If Aristotle believed that "being a woman" was sufficient for being irrational, then every instance of a woman would be an instance of irrationality; i.e., "For all x, if x is a woman, then x is not rational." This conditional, like all conditionals, can be falsified by satisfying the conditions for the antecedent and not those of the consequent. So, in order to disconfirm Aristotle's causal claim, all that is needed is an instance of a person who is both a woman and rational. As we have seen, a fruitful tactic might be to raise and educate female children in the same manner as males. We would then discover that being female is not a sufficient condition for lacking rational capacity.

5.4 The Logic of Correlations

An astute reader will no doubt say that while the logic of necessary and sufficient conditions is a clear way to discover strict causal connections, many of the most important claims do not lend themselves to such strict verification. For example, when the U.S. government researchers claim that cigarette smoking causes cancer, they are not claiming that smoking cigarettes is either a sufficient or necessary condition for cancer. If cigarette smoking were a sufficient condition for cancer, then for all x, if x is an instance of smoking, then x will also be an instance of cancer. If cigarette smoking were a necessary condition for cancer, then anyone who did not smoke would not get cancer. We know that both of these claims are false: some smokers do not contract lung cancer and some people with lung cancer have never smoked. So, what does the researchers' claim assert? Only when we understand what is being claimed can we evaluate its reasonableness.

When scientists claim that some substance causes cancer, they have gathered their knowledge through controlled experimentation and concluded that the correlation between the presence of the substance and the disease is much higher than would occur if there were only a chance relationship. In the case of smoking and cancer, they study two groups, smokers and non-smokers, who are similar in most respects and then record the instances of lung cancer in both groups. If the only variable is that one group smokes while the other does not, and the group that smokes has a significantly higher occurrence of lung cancer, then it is reasonable to conclude that "smoking causes cancer." "Cause" here does not mean a sufficient condition but rather something weaker like a contributing factor. If one is interested in not developing lung cancer, it would be wise not to smoke.

5.5 Analogical Arguments

There is another form of inductive reasoning which is often very useful for critical thinkers. When we see that two things are alike in many respects, we are inclined to think of them as alike in all other respects. This is called *analogical reasoning.* Analogical reasoning provides evidence for a conclusion by showing that one known entity (X) has properties a, b, c, and d and that the subject in question (Y) also has a, b, and c; hence, it is likely that Y also has property d. For example, suppose that we wanted to argue that it is probable the United States society "will fall" and that we know something about the Roman Empire, including its fall. We might argue as follows: "The Roman Empire had the following properties: citizens who were overly materialistic, a decadent leisure class, large military expenditures, a large class of poor who were dependent upon government programs, and citizens lacking civic and moral virtue. In addition, the empire fell. The United States has citizens who are overly materialistic; it has a decadent leisure class, spends huge amounts on the military, and has large numbers of people supported by welfare; it also has many citizens who lack civic and moral virtue. Hence, one might conclude that it is highly probable that the United States will also fall."

The strength of analogical arguments is proportional to the number of relevant similarities between the entities being compared, as well as to the absence of relevant dissimilarities. The more similarities the things share and the fewer the significant differences, the stronger the evidence for the conclusion. Conversely, the way to attack analogical arguments is to point out that while the things being compared have certain similarities, there are differences which make the likelihood of both having the property in question very questionable. The argument would look something like this: Even though X and Y share properties a, b, and c, X also has e, f, and g, while Y does not. Hence the likelihood of both having d is not at all certain. For example, when comparing the societies of Rome and the United States, one can identify many similarities. One might also identify many differences, e.g., kinds of economies, a more equal distribution of wealth, technological abilities, the status of women, rights for all persons, *et al.* Surely these differences are relevant to the overall social stability as well as to continued development.

Analogical arguments are widely used. They are used by theologians to argue for God's existence, by doctors who use animals for experimentation, and by historians to predict social changes. But, as with all inductive arguments, critical thinkers should examine analogical arguments carefully before accepting their conclusions. They are weaker than the usual inductive argument or generalization because if the desired conclusion of the argument could be tested through observation or accepted methods of experimentation, there would be no need to use analogical reasoning. The questioner would be able to set up an experiment to show that if X possesses property d, then certain observable phenomena will occur. Upon experimentation, if the phenomena do not occur, then one might conclude that X does not possess property d. If the phenomena occur, one will have good reason to accept the claim.

Hence, analogical arguments, while widespread, are usually not as compelling as we might like. They are often used in areas in which direct audience or scientific experimentation are impossible--in areas of high speculation and debate.

5.6 Conclusion

So, what can we conclude about the certainty of premises that are established through induction? We can assume with a high degree of probability that they are true *if* we take the time to observe carefully and extensively *and* conduct experiments that seek to falsify our hypotheses. Through experimentation, we can ascertain with a high degree of certainty whether being a certain kind of thing with certain properties is a necessary or sufficient condition for having other properties or exhibiting other kinds of behavior. However, it is always possible that future observations or experiments may falsify our currently accepted scientific laws or inductive generalizations.

Obviously, not all instances of inductive generalizations are instances of thinkers taking polls or seeking to discover necessary or sufficient conditions for phenomena. For example, if after watching commercial television for a time, someone claims that the characters of most television shows are shallow and unbelievable, that person is not claiming that there is any causal connection between being a television character and being shallow. The person who makes such a claim is simply generalizing from his or her past experience. However, while not all inductive generalizations claim to be establishing strict causal relations, all scientific laws can be characterized as inductive generalizations which make claims about *all* members of a class of entities based on the examination of only some. These laws are based on knowledge of only *part* of the members of the class and so are not certain. Additionally, because they make universal claims, they can be disproved by counter-examples. The claim that "If something is a body, then it follows Newton's Laws of Motion" can be disproved by finding something that is a body and does not follow Newton's Laws. That is to say, the conditional statement that states the law is disproved *only* in the case in which the antecedent is true but the consequent is false.

In general, the greater the percentage of the members of the class which have been examined before making the generalization and the more extensive the attempts to falsify the claim, the stronger the inductive strength of the argument.

Exercise 5.6

A. Complete the following exercises.

1. Distinguish between deduction and induction as modes of reasoning. Which is more certain? Why?

2. Identify the following arguments as either inductive or deductive. Tell why each is inductive or deductive.

   a. All cultures that have been examined have different values. Hence no absolute moral values exist.

   b. If fire is present, oxygen will be present. Fire is present; hence oxygen is present.

   c. Of the four atheists whom I know, each is unethical; hence all atheists are ethical.

   d. Of the hundreds of Presbyterians whom I know, each is honest; hence Presbyterians are honest.

3. Distinguish between a necessary and a sufficient condition. Give two examples of each.

4. Describe the manner in which we achieve strong inductive support for a claim or position through inductive reasoning.

5. Why is it important not only to try to prove one's hypothesis by observation, but also to try to disconfirm it through experimentation? Give examples of beliefs, claims, or theories which have confirmation instances but are not subject to experimentation.

6. Explain why it is logically impossible to prove that an inductive generalization is true or false.

7. Explain the meaning of the claim, "Sun bathing causes skin cancer." What does the word cause mean in this case?

B. Writing Assignment:

1. Construct analogical arguments either for or against the following claims:

   a. The United States is becoming a socialist country like Russia.

   b. God will destroy Las Vegas, just as he did Sodom.

2. Write a short paper using analogical arguments to address one of the following issues:

   a. There is a current debate over whether animals should have the right not to be abused in scientific experimentation. Discuss whether some animals are sufficiently like humans to warrant these rights. Are ther significant differences?

   b. Some political theorists have argued that societies are like organisms, and individual citizens, like the cells of an organism, can be sacrificed for the good of the whole. Is this a good analogical argument? Are there relevant disimilarities between states and organisms, and citizens and cells?

   c. Is the fetus sufficiently like a human being to warrant a right to life?

   d. Some people who study artificial intelligence claim that the human brain is really like a computer? Evaluate the analogy.

   e. The French feminist and philosopher Simone de Beauvoir claimed that marriage is really prostitution made legal. So, if marriage is legal, so should prostitution. Is this an appropriate analogy?

Notes for Chapter Five

[1] Aristotle, *History of Animals*, Bk. IX, Ch. 1.

THE FOUR IDOLS *

Francis Bacon

The idols and false notions which are now in possession of the human understanding, and have taken deep root therein, not only so beset men's minds that truth can hardly find entrance, but even after entrance obtained, they will again in the very instauration of the sciences meet and trouble us, unless men being forewarned of the danger fortify themselves as far as may be against their assaults.

There are four classes of idols which beset men's minds. To these for distinction's sake I have assigned names--calling the first class "Idols of the Tribe"; the second, "Idols of the Cave"; the third, "Idols of the Marketplace"; the fourth, "Idols of the Theater."

The formation of ideas and axioms by true induction is no doubt the proper remedy to be applied for the keeping off and clearing away of idols. To point them out, however, is of great use; for the doctrine of idols is to the interpretation of nature what the doctrine of the refutation of sophisms is to common logic.

"The Idols of the Tribe" have their foundation in human nature itself, and in the tribe or race of men. For it is a false assertion that the sense of man is the measure of things. On the contrary, all perceptions as well of the sense as of the mind are according to the measure of the individual and not according to the measure of the universe. And the human understanding is like a false mirror, which, receiving rays irregularly, distorts and discolors the nature of things by mingling its own nature with it.

"The Idols of the Cave" are the idols of the individual man. For everyone (besides the errors common to human nature in general) has a cave or den of his own,

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* Francis Bacon, Works, Eds. Spedding, Ellis, and Heath (London, 1870).

which refracts and discolors the light of nature: owing either to his own proper and peculiar nature: or to his education and conversation with others; or to the reading of books, and the authority of those whom he esteems and admires; or to the differences of impressions, accordingly as they take place in a mind preoccupied and predisposed or in a mind indifferent and settled; or the like. So that the spirit of man (according as it is meted out to different individuals) is in fact a thing variable and full of perturbation, and governed as it were by chance. Whence it was well observed by Heraclitus that men look for sciences in their own lesser worlds, and not in the greater or common world.

There are also idols formed by the intercourse and association of men with each other, which I call "Idols of the Marketplace," on account of the commerce and consort of men there. For it is by discourse that men associate; and words are imposed according to the apprehension of the vulgar. And therefore the ill and unfit choice of words wonderfully obstructs the understanding. Nor do the definitions or explanations wherewith in some things learned men are wont to guard and defend themselves, by any means set the matter right. But words plainly force and overrule the understanding, and throw all into confusion and lead men away into numberless empty controversies and idle fancies.

Lastly, there are idols which have immigrated into men's minds from the various dogmas of philosophies, and also from wrong laws of demonstration. These I call "Idols of the Theater;" because in my judgement all the received systems are but so many stage-plays, representing worlds of their own creation after an unreal and scenic fashion. Nor is it only of the systems now in vogue, or only of the ancient sects and philosophies, that I speak; for many more plays of the same kind may yet be composed and in like artificial manner set forth; seeing that errors the most widely different have nevertheless causes for the most part alike. Neither again do I mean this only of entire systems, but also of many principles and axioms in science, which by tradition, credulity, and negligence, have come to be received.

But of these several kinds of idols I must speak more largely and exactly, that the understanding may be duly cautioned.

The human understanding is of its own nature prone to suppose the existence of more order and regularity in the world than it dins. And though there be many things in nature which are singular and unmatched, yet it devises for them parallels and conjugates and relatives which do not exist. Hence the fiction that all celestial bodies move in perfect circles; spirals and dragons being (except in name) utterly rejected. Hence too the element of fire with its orb is brought in, to make up the square with the other three which the sense perceives. Hence also the ratio of density of the so-called elements is arbitrarily fixed at ten to one. And so on of other dreams. And these fancies affect not dogmas only, but simple notions also.

The human understanding when it has once adopted an opinion (either as being the received opinion or as being agreeable to itself) draws all things else to support and agree with it. And though there be a greater number and weight of instances to be found on the other side, yet these it either neglects and despises, or else by some distinction sets aside and rejects; in order that by this great and pernicious predetermination the authority of its former conclusions may remain inviolate. And therefore it was a good answer that was made by one who when they showed him hanging in a temple a picture of those who had paid their vows as having escaped shipwreck, and would have him say whether he did not now acknowledge the power of the gods--"Ay," asked he again," but where are they painted that were drowned after their vows?" And such is the way of all superstition, whether in astrology, dreams, omens, divine judgments, or the like; wherein men having a delight in such vanities, mark the events where they are fulfilled, but where they fail, though this happen much oftener, neglect and pass them by. But with far more subtlety does this mischief insinuate itself into philosophy and the sciences; in which the first conclusion colors and brings into conformity with itself all that come after, though far sounder and better. Besides, independently of that delight and vanity which I have described, it is the peculiar and perpetual error of the human intellect to be more moved and excited by affirmatives than by negatives; whereas it ought properly to hold itself indifferently disposed towards both alike. Indeed, in the establishment of any true axiom, the negative instance is the more forcible of the two.

The human understanding is moved by those things most which strike and enter the mind simultaneously and suddenly, and so fill the imagination; and then it feigns and supposes all other things to be somehow, though it cannot see how, similar to those few things by which it is surrounded. But for that going to and fro to remote and heterogeneous instances, by which axioms are tried as in the fire, the intellect is altogether slow and unfit, unless it be forced thereto by severe laws and overruling authority.

The human understanding is unquiet; it cannot stop or rest, and still presses onward, but in vain. Therefore it is that we cannot conceive of any end or limit to the world, but always as of necessity it occurs to us that there is something beyond. Neither again can it be conceived how eternity has flowed down to the present day; for that distinction which is commonly received of infinity in time past and in time to come can by no means hold; for it would thence follow that one infinity is greater than another, and that infinity is wasting away and tending to become finite. The like subtlety arises touching the infinite divisibility of lines, from the same inability of thought to stop. But this inability interferes more mischievously in the discovery of causes: for although the most general principles in nature ought to be held merely positive, as they are discovered, and cannot with truth be referred to a cause; nevertheless, the human understanding being unable to rest still seeks something prior in the order of nature. And then it is that in struggling towards that which is further off, it falls back upon that which is more nigh at hand; namely, on final causes; which have relation clearly to the nature of man rather than to the nature of the universe, and from this source have strangely defiled philosophy. But he is no less an unskilled and shallow philosopher who seeks causes of that which is most general, than he who in things subordinate and subaltern omits to do so.

The human understanding is no dry light, but receives an infusion from the will and affections; whence proceed sciences which may be called "sciences as one would." For what a man had rather were true he more readily believes. Therefore he rejects difficult things from impatience of research; sober things, because they narrow hope; the deeper things of nature, from superstition; the light of experience from arrogance and pride, lest his mind should seem to be occupied with things mean and transitory; things not commonly believed, out of deference to the opinion of the vulgar. Numberless in short are the ways, and sometimes imperceptible, in which the affections color and infect the understanding.

But by far the greatest hindrance and aberration of the human understanding proceeds from the dullness, incompetency, and deceptions of the sense; in that things which strike the sense outweigh things which do not immediately strike it, though they be more important. Hence it is that speculation commonly ceases where sight ceases; insomuch that of things invisible there is little or no observation. Hence all the working of the spirits enclosed in tangible bodies lies hid and unobserved of men. So also all the more subtle changes of form in the parts of coarser substance (which they commonly call alteration, though it is in truth local motion through exceedingly small spaces) is in like manner unobserved. And yet unless these two things just mentioned be searched out and brought to light, nothing great can be achieved in nature, as far as the production of works is concerned. So again the essential nature of our common air, and of all bodies less dense than air (which are very many) is almost unknown. For the sense by itself is a thing infirm and erring; neither can instruments for enlarging or sharpening the senses do much; but all the truer kind of interpretation of nature is effected by instances and experiments fit and apposite, wherein the sense decides touching the experiment only, and the experiment touching the point in nature and the thing itself.

The human understanding is of its own nature prone to abstractions and gives a substance and reality to things which are fleeting. But to resolve nature into abstractions is less to our purpose than to dissect her into parts; as did the school of Democritus, which went further into nature than the rest. Matter rather than forms should be the object of our attention, its configurations and changes of configuration, and simple action, and law of action or motion; for forms are figments of the human mind, unless you will call those laws of action forms.

Such then are the idols which I call "Idols of the Tribe;" and which take their rise either from the homogeneity of the substances of the human spirit, or from its preoccupation, or from its narrowness, or from its restless motion, or from an infusion of the affections, or from the incompetency of the sense, or from the mode of impression.

The "Idols of the Cave" take their rise in the peculiar constitution, mental and bodily of each individual; and also in education, habit, and accident. Of this kind there is a great number and variety; but I will instance those the pointing out of which contains the most important caution, and which have most effect in disturbing the clearness of the understanding.

Men become attached to certain particular sciences and speculations, either because they fancy themselves the authors and inventors thereof, or because they have bestowed the greatest pains upon them and become most habituated to them. But men of this kind, if they betake themselves to philosophy and contemplations of a general character, distort and color them in obedience to their former fancies; a thing especially to be noticed in Aristotle, who made his natural philosophy a mere bondservant to his logic, thereby rendering it contentious and well nigh useless. The race of chemists again out of a few experiments of the furnace have built up a fantastic philosophy, framed with reference to a few things; and Gilbert also, after he had employed himself most laboriously in the study and observation of the loadstone, proceeded at once to construct an entire system in accordance with his favorite subject.

There is one principal and, as it were, radical distinction between different minds, in respect of philosophy and the sciences, which is this: that some minds are stronger and apter to mark the differences of things, others to mark their resemblances. The steady and acuter mind can fix its contemplations and dwell and fasten on the subtlest distinctions: the lofty and discursive mind recognizes and puts together the finest and most general resemblances. Both kinds however easily err in excess, by catching the one at gradations, the other at shadows.

There are found some minds given to an extreme admiration of antiquity, others to an extreme love and appetite for novelty; but few so duly tempered that they can hold the mean, neither carping at what has been well laid down by the ancients, nor despising what is well introduced by the moderns. This however turns to the great injury of the sciences and philosophy; since these affectations of antiquity and novelty are the humors of partisans rather than judgments; and truth is to be sought for not in the felicity of any age, which is an unstable thing, but in the light of nature and experience, which is eternal. These factions therefore must be abjured, and care must be taken that the intellect be not hurried by them into assent.

Contemplations of nature and of bodies in their simple form break up and distract the understanding, while contemplations of nature and bodies in their composition and configuration overpower and dissolve the understanding: a distinction well seen in the school of Leucippus and Democritus as compared with the other philosophies. For that school is so busied with the particles that it hardly attends to the structure: while the others are so lost in admiration of the structure that they do not penetrate to the simplicity of nature. These kinds of contemplation should therefore be alternated and taken by turns: that so the understanding may be rendered at once penetrating and comprehensive, and the inconveniences above mentioned, with the idols which proceed from them, may be avoided.

Let such then be our provision and contemplative prudence for keeping off and dislodging the "Idols of the Cave," which grow for the most part either out of the predominance of a favorite subject, or out of an excessive tendency to compare or to distinguish, or out of partiality for particular ages, or out of the largeness or minuteness of the objects contemplated. And generally let every student of nature take this as a rule--that whatever his mind seizes and dwells upon with peculiar satisfaction is to be held in suspicion, and that so much the more care is to be taken in dealing with such questions to keep the understanding even and clear.

But the "Idols of the Marketplace" are the most troublesome of all: idols which have crept into the understanding through the alliances of words and names. For men believe that their reason governs words; but it is also true that words react on the understanding; and this it is that has rendered philosophy and the sciences sophistical and inactive. Now words, being commonly framed and applied according to the capacity of the vulgar, follow those lines of division which are most obvious to the vulgar understanding. And whenever an understanding of greater acuteness or a more diligent observation would alter those lines to suit the true divisions of nature, words stand in the way and resist the change. Whence it comes to pass that the high and formal discussions of learned men end oftentimes in disputes about words and names; with which (according to the use and wisdom of the mathematicians) it would be more prudent to begin, and so by means of definitions reduce them to order. Yet even definitions cannot cure this evil in dealing with natural and material things; since the definitions themselves consist of words, and those words beget others: so that it is necessary to recur to individual instances, and those in due series and order; as I shall say presently when I come to the method and scheme for the formation of notions and axioms.

The idols imposed by words on the understanding are of two kinds. They are either names of things which do not exist (for as there are things left unnamed through lack of observation, so likewise are there names which result from fantastic suppositions and to which nothing in reality responds), or they are names of things which exist, but yet confused and ill-defined, and hastily and irregularly derived from realities. Of the former kind are Fortune, the Prime Mover, Planetary Orbits, Element of Fire, and like fictions which owe their origin to false and idle theories. And this class of idols is more easily expelled, because to get rid of them it is only necessary that all theories should be steadily rejected and dismissed as obsolete.

But the other class, which springs out of a faulty and unskillful abstraction, is intricate and deeply rooted. Let us take for example such a word as humid; and see how far the several things which the word is used to signify agree with each other; and we shall find the word humid to be nothing else than a mark loosely and confusedly applied to denote a variety of actions which will not bear to be reduced to any constant meaning. For it both signifies that which easily spreads itself round any other body; and that which in itself is indeterminate and cannot solidize; and that which readily yields in every direction; and that which easily divides and scatters itself; and the which easily unites and collects itself; and that which readily flows and is put in motion; and that which readily clings to another body and wets it; and that which is easily reduced to a liquid, or being solid easily melts. Accordingly when you come to apply the word--if you take it in one sense, flame is humid; if in another, air is not humid; if in another fine dust is humid; if in another, glass is humid. So that it is easy to see that the notion is taken by abstraction only from water and common and ordinary liquids, without any due verification.

There are however in words certain degrees of distortion and error. One of the least faulty kinds is that of names of substances, especially of lowest species and well-deduced (for the notion of chalk and of mud is good, of earth bad); a more faulty kind is that of actions, as to generate, to corrupt, to alter; the most faulty is of qualities (except such as are the immediate objects of the sense), as heavy, light, rare, dense, and the like. Yet in all these cases some notions are of necessity a little better than others, in proportion to the greater variety of subjects that fall within the range of the human sense.

But the "Idols of the Theater" are not innate, nor do they steal into the understanding secretly, but are plainly impressed and received into the mind from the play-books of philosophical systems and the perverted rules of demonstration. To attempt refutations in this case would be merely inconsistent with what I have already said: for since we agree neither upon principles nor upon demonstrations, there is not place for argument. And this is so far well, inasmuch as it leaves the honor of the ancients untouched. For they are no wise disparaged--the question between them and me being only as to the way. For as the saying is, the lame man who keeps the right road outstrips the runner who takes a wrong one. Nay, it is obvious that when a man runs the wrong way, the more active and swift he is the further he will go astray.

But the course I propose for the discovery of sciences is such as leaves but little to the acuteness and strength of wits, but places all wits and understandings nearly on level. For as in the drawing of a straight line or perfect circle, much depends on the steadiness and practice of the hand, if it be done by aim of hand only, but if with the aid of rule or compass, little or nothing; so is it exactly with my plan. But though particular confutations would be of no avail, yet touching the sects and general divisions of such systems I must say something; something also touching the external signs which show that they are unsound; and finally something touching the causes of such great infelicity and of such lasting and general agreement in error; that so the access to truth may be made less difficult, and the human understanding may the more willingly submit to its purgation and dismiss its idols.

"Idols of the Theater," or of Systems, are many, and there can be and perhaps will be yet many more. For were it not that now for many ages men's minds have been busied with religion and theology; and were it not that civil governments, especially monarchies, have been averse to such novelties, even in matters speculative; so that men labor therein to the peril and harming of their fortunes--not only unrewarded, but exposed also to contempt and envy; doubtless there would have arisen many other philosophical sects like to those which in great variety flourished once among the Greeks. For as on the phenomena of the heavens many hypotheses may be constructed, so likewise (and more also) many various dogmas may be set up and established on the phenomena of philosophy. And in the plays of this philosophical theater you may observe the same thing which is found in the theater of the poets.

that stories invented for the stage are more compact and elegant, and more as one would wish them to be, than true stories out of history.

In general, however, there is taken for the material of philosophy either a great deal out of a few things, or a very little out of many things; so that on both sides philosophy is based on too narrow a foundation of experiment and natural history, and decides on the authority of too few cases. For the rational school of philosophers snatches from experience a variety of common instances, neither duly ascertained nor diligently examined and weighed, and leaves all the rest to meditation and agitation of wit.

There is also another class of philosophers, who having bestowed much diligent and careful labor on a few experiments, have thence made bold to educe and construct systems; wrestling all other facts in a strange fashion to conformity therewith.

And there is yet a third class of philosophers, consisting of those who out of faith and veneration mix their philosophy with theology and traditions; among whom the vanity of some has gone so far aside as to seek the origin of sciences among spirits and genii. So that this parent stock of errors--this false philosophy--is of three kinds; the sophistical, the empirical, and the superstitious....

But the corruption of philosophy by superstition and an admixture of theology is far more widely spread, and does the greatest harm, whether to entire systems or to their parts. For the human understanding is obnoxious to the influence of the imagination no less than to the influence of common notions. For the contentious and sophistical kind of philosophy ensnares the understanding; but this kind, being fanciful and tumid and half poetical, misleads it more by flattery. For there is in man an ambition of the understanding, no less than of the will, especially in high and lofty spirits.

Of this kind we have among the Greeks a striking example in Pythagoras, though he united with it a coarser and more cumbrous superstition; another in Plato and his school, more dangerous and subtle. It shows itself likewise in parts of other philosophies, in the introduction of abstract forms and final causes and first causes, with the omission in most cases of causes intermediate, and the like. Upon this point the greatest caution should be used. For nothing is so mischievous as the apotheosis of error; and it is a very plague of the understanding for vanity to become the object of veneration. Yet in this vanity some of the moderns have with extreme levity indulged so far as to attempt to found a system of natural philosophy on the first chapter of Genesis, on the book of Job, and other parts of the sacred writings; seeking for the dead among the living: which also makes the inhibition and repression of it the more important, because from this unwholesome mixture of things human and divine there arises not only a fantastic philosophy but also an heretical religion. Very meet it is therefore that we be sober-minded, and give to faith that only which is faith's...

So much concerning the several classes of Idols, and their equipage: all of which must be renounced and put away with a fixed and solemn determination, and the understanding thoroughly freed and cleansed; the entrance into the kingdom of man, founded on the sciences, being not much other than the entrance into the kingdom of heaven, whereinto none may enter except as a little child.

Chapter Six

Informal Fallacies

There is a group of fallacies which are often called "informal fallacies." The name, however, may be misleading. A more accurate name would be "common fallacies." The reason the name "informal fallacies" is somewhat misleading is that most of these fallacies are formal fallacies. They are fallacies because, like other invalid arguments, the premises neither entail nor give support to the conclusions.

It is useful to study such fallacies because a familiarity with such common errors in reasoning and their names allows one to identify quickly many instances of fallacious reasoning without having to run a formal analysis or questioning the inductive strength of the argument.

While some texts study closely hundreds of such common errors in reasoning, we shall limit our study to just a few of the more common ones.

The Genetic Fallacy

The genetic fallacy is committed when someone *attacks* a position by attacking the *origin* or *genesis* of the argument, including the motives of the people who put forth the argument. That is to say, the argument is criticized because of its source, rather than its validity or the acceptability of its premises. We know, however, that **the source of a claim or argument has nothing to do with the truth or credibility of the claim or the validity of the argument.** For example, if someone argued that democracy could not be a good form of government because those who first started democracies were poor, illiterate slaves rather than successful, aristocratic citizens, the person would have committed the genetic fallacy. The origin of a position cannot determine whether it is acceptable, nor do the motives of a person holding a position have anything to do with the merit of the position. For example, if a coward who fears war gives arguments which aim to show that war is immoral, the person's cowardice has nothing to do with the reasonableness of the position. If an argument is a weak argument, it is weak either because the premises are unacceptable or because it is invalid, not because of who offers the argument. The effectiveness of the fallacy is grounded in the problem of not being able to separate a position or argument from the person who holds it--a previously discussed hindrance to critical thinking.

One of the more common instances of a genetic fallacy is the instance in which a position is criticized because of the behavior of the person who espouses the position contradicts the espoused position. This is called the tu quoque or "you're another" fallacy. We call persons who do not practice what they preach "hypocrites." While hypocrisy may be a character flaw, the hypocrisy of the person presenting the argument has nothing to do with the truth of the position or the cogency of the argument. An example of this is people who argue against Christianity by pointing out that most who profess Christianity fail to live in accordance with its religious principles: devotion to spirituality, chosen poverty, love of all, hatred of injustice, forgiveness of enemies, etc. The fact that many professed Christians do not live up to the ideals prescribed in the Bible does not entail that Christian doctrine is flawed. Another common example of the tu quoque fallacy is when capitalists attack Marx's arguments against capitalism by pointing out that Marx himself lived off the money provided by his wealthy friend Friedrich Engels. Whether Christianity or Marxism is a reasonable position to hold has nothing to do with the life-styles of those who present the ideas. One simply must look at positions and make a decision based on the evidence and arguments.

Appeal to a False Authority

The fallacy of an appeal to a false authority can be understood as the opposite of a genetic fallacy. Genetic fallacies *attack* a position by attacking the source: the appeal to a false authority attempts to *support* a position by appealing to some questionable "authority." One problem with identifying instances of the fallacy is that some people are indeed authorities on some subjects and their testimony should be accepted as at least making the conclusion probable. Hence, not all appeals to authority are fallacies. For example, we would have good reason to believe physics professors when they tell us something about the behavior of electrons. Testimony by persons who are in fact authorities in their field is especially important in those instances in which the conclusion in question cannot be readily observed or proved by ordinary persons. On the other hand, if rock stars or professional athletes were to testify about the behavior of electrons, we should seriously question their status as "authorities" in physics.

Another problem with appeals to authority is that we tend to use known and respected authorities in one area to testify about claims in other, unrelated areas. For example, if Einstein says something about physics, we should believe him, but if he goes on to comment about the nature of human rights, we should be skeptical. His expertise in physics does not make him an expert in political and ethical areas.

The fallacy of Appeal to False Authority is often committed in advertising and in political campaigns. Movie stars and athletes are often used as "political authorities" to try to convince us of the worth of certain candidates for political office. The arguments sometimes run as follows: "Vote for candidate X because he is supported by persons whom we respect as entertainers." If we are being good critical thinkers, we should immediately ask what special expertise movie actors, athletes, and singers have in making political decisions. What does the ability to run, jump, sing, or memorize lines have to do with being a good politician? What training do these people have in political philosophy or foreign relations?

We live in a world too complicated and specialized for everyone adequately to understand and evaluate everything. This means that many of our decisions must be based on the testimony of experts. But we must learn not to accept testimony by people who are not experts in the field in question. We must learn to ask first what sort of knowledge is required in order to know what is being claimed and second whether the person has the needed experience to acquire such knowledge.

The Appeal to Ignorance

The fallacy of arguing from ignorance is committed when someone tries to conclude from the fact that some position (p) is not proved false, that it (p) must be true. For example, if someone argues that God must exist because no one has conclusively proved that God does not exist, the person has committed this fallacy. Or if one argues that because there is no evidence that one general education program is any more useful than another, so some alternative proposal is preferable, one has committed this fallacy. In the Salem witch trials this common tactic was used by the prosecutor: "If you cannot prove that you are not a witch, then you must be a witch." **The problem is that no evidence is no evidence.** If something (p) has not been proved, it has not been proved. The appropriate response to such reasoning is simply to suspend judgment. Belief, one way or another, should be based on evidence or argument, not lack of both.

Appeal to Numbers

This is the fallacy of being asked to believe that a position is true because it is popular or the majority believe it. The following claims are examples:

a. The President's economic policies must be good for the country because 60% of the people polled agree with them.

b. Socrates must have been guilty of the crimes charged against him because the majority of the people voted that he was guilty.

c. The majority of students polled believed that the Western Civilization requirements were useless; thus the requirements are useless.

You should remember that if something is believed to be true, the reason to believe it is not that everyone else does, but rather because there are good reasons and arguments to believe the position. One of these reasons may well be because a community of experts in the area in question agree, but not because a majority of non-experts agree. If everyone in the world believed the world were flat, it would not follow that the world is flat. The concerned person should look at the reasons and arguments for the beliefs and evaluate them carefully and honestly.

Fallacies of Division and Composition

The fallacies of Division and Composition are two separate and opposite fallacies. The fallacy of *division* is committed when one believes that because some property is true of the whole, it is also true of the individual parts that make up the whole. For example, one might argue that because water is a liquid, each of its parts (hydrogen and oxygen) is liquid, or because America is a wealthy country, each of its citizens is wealthy. What is true of any whole need not be true of its parts. A college may by most standards be a good college, but it does not follow that all of its professors or all of its students are good.

The opposite of the fallacy of division is the fallacy of *composition*. This fallacy is committed when someone argues that because some property is true of the part, it is then true of the whole. For example, Aristotle once argued that since all of the parts of humans (the eye, hand, foot, etc.) had functions, humans as a whole must have a function.

Sometimes it is obviously true that properties are shared by parts and wholes; e.g., if all parts of a house are wooden, then the house is wooden. But as our examples show, such inferences are *not always true*, and as we know from our examination of valid inferences, if the premises are true, so are the conclusions. If it turns out that a whole and a part share a property, it is because of the way the world is, not because of any logical relationship.

Equivocation

As we have seen, one of the skills critical thinkers need is the ability to clarify claims before they evaluate them. One place where clarification is made difficult is when words are used equivocally.

Many words have more than one meaning. When a word is used in more than one sense or with a different meaning within a given argument, the fallacy of equivocation is committed. For example, consider the following argument:

1. Only man is rational.
2. No woman is a man.
3. Hence, no woman is rational.

While the argument may appear to be valid, the fallacy involved is that the word "man" in premise #1 is not used in the same sense as in premise #2. "Man" in premise #1 means mankind or humanity and is used in the generic sense. The word "man" in premise #2 is used in the gender-specific sense to indicate the sex of the person. The fallacy of equivocation reminds us that we must always clarify the meaning of the words we use in arguments. If we do not clarify them, it is very easy for the meaning of the words to shift during the discussion. If there is a shift in meaning, another variable would be required, and that would make the logical form in question invalid.

False Cause

Arguments which suggest that *events* are causally related when in fact no such causal connection has been established can commit the False Cause Fallacy. This fallacy is committed because causal claims are often made based on some observed correlation without a systematic search for necessary or sufficient conditions through controlled experiments or statistical analyses. Superstition or old wives' tales are clear examples. In such instances, the people believe that because two events often occur together, one causes the other. There are, however, more sophisticated and more effective uses of false cause fallacies. Whenever a person argues that because event A preceded event B, event A caused event B, that person has committed the false cause fallacy. For example, if a president were to argue that because after her administration was in power the economy improved and that hence her administration's being in power caused the improvement in the economy, the president would be committing the false cause fallacy. Temporal succession does not entail causal connection. Knowledge of causal connections requires careful experimentation, not simple observation which describes the order of events and concludes that prior events cause later ones. Historical accounts also tend to commit this fallacy. Of course, it is very difficult to experiment with history.

Another form of false cause fallacy is to reason that, because two events, A and B, occur together, one is the cause of the other. For example, to argue that every time hemlines go up, so do stock prices is obviously to commit this fallacy.

As we saw in Chapter Five, to determine causal relations is a difficult task that requires careful observation, hypotheses, and controlled experiment. The human mind seems designed to make causal inferences, but we must be careful to evaluate such inferences critically.

False Dilemma

Sometimes we are presented with arguments which are forms of disjunctive syllogisms, but the disjunction is not exhaustive. That is to say, a premise may claim that we must choose "either p or q" while other options may exist. In a valid dilemma, the disjunction must exhaust the possibilities; other viable alternatives should not exist. If they do, then the fallacy of false dilemma is committed.

Consider the following argument: You must either get married or remain chaste. You don't want to remain chaste, hence you should get married. Obviously there are alternatives to the first disjunction. As we know, marriage is not a necessary condition for sexual intercourse.

Straw Man Fallacy

Critical thinkers evaluate honestly alternative points of view, especially those that are counter to their own beliefs. The Straw Man Fallacy is committed when we do not fairly evaluate a position but instead misrepresent the position in a way that makes it less convincing or easier to attack. People who are opposed to existing communist governments are often guilty of misrepresenting the ideas of Karl Marx so that they are easier to attack. For example, they might ascribe an idea to Marx that he never held and then show how unreasonable it was; e.g., "Marx believed that everyone should be given equal payment, no matter how hard the work or difficult the job. If this were a practice, why then would anyone work?"

To combat our tendency to misrepresent ideas that we dislike, we should try to give the most charitable interpretation of the idea and the supporting arguments. Only then can we be sure that we have an ample opportunity to disclose the truth.

There are other informal or "common" logical fallacies, but for the purposes of this short text this list is sufficient. Knowledge of these common errors in reasoning allows us to identify quickly some invalid arguments without having to employ a formal logical analysis. Once we think we have identified a problem, we should ask the person if there are other, more convincing, reasons for accepting the position in question.

Exercise 6.1

Identify the informal fallacies in the following statements.

1. Because the constituent cells of the human body are microscopic, the entire body too must be microscopic.

2. No one has proved that there isn't a pot of gold at the end of the rainbow. Therefore, I am perfectly justified in believing that there is.

3. I would like to believe what you say about the inadvisability of the tuition raise. But I happen to know that you are a student.

4. Dogs are frequently encountered in the streets. Afghan hounds are dogs. Therefore, Afghan hounds are frequently encountered in the streets.

5. The committee report is worthless. It has to be, because the committee is composed of a bunch of idealistic intellectuals.

6. Business 301 must be a good course. Look at all the people taking it.

7. Every part used in the construction of the airship Hindenburg was light in weight, thus the airship as a whole was light.

8. There must be ghosts because no one has been able to prove there aren't any.

9. American Indians are disappearing. That man is an American Indian. Therefore, that man is disappearing.

10. Knowledge is power. Power corrupts. Hence, knowledge corrupts.

11. "Each person's happiness is a good to that person, and the general happiness, therefore, a good to the aggregate of all persons." J.S. Mill

12. There is no evidence that Professor Hiccup is a poor teacher. Thus he must be a decent teacher.

13. Don't accept the students' arguments for more votes on faculty committees. We all know that students are irrational.

14. One should have sex with those one loves. Parents love their children. Hence parents should have sex with their children.

15. President Carter's policies were obviously inflationary. While he was in office, inflation grew to over 15 percent ayear.

16. Since 1840, all the U.S. presidents elected in even numbered years in multiples of twenty have died in office. The president elected in 1980 will die in office.

17. Either we build the MX missile systems or give up all hope of arms control. We all desire arms control, so we must build the MX!

18. America, love it or leave it.

19. We really don't need to know English grammar. I have noticed that professors of English make mistakes. If it's not important to them, why should it be important to us?

20. Christianity is a horrible religion. It is responsible for the Salem witch trials, the Inquisition, and the Crusades. Any religion that could create such social atrocities is unacceptable.

21. There is no reason to accept the golf coach's instruction. Have you ever seen his swing? It's horrible.

Exercise 6.2

For each of the informal fallacies described in this section either make up or find two examples.

Chapter Seven

Reasoning and Writing

> To say what one thinks is to discover what one thinks.
> Richard Mitchell, The Underground Grammarian

7.1 Expository Writing

For college students, critical thinking often culminates in writing papers about many issues. In academic settings, the kind of writing most often assigned is called "expository writing." Expository writing lays out and defends a position; it also exposes to the audience what was formerly hidden or misunderstood. As we study the process of developing a strong expository essay, we will employ and extend most of the critical thinking skills and dispositions with which we are now familiar: the need for careful analysis, the use of deductive and inductive arguments, the evaluation of evidence and reasons, and the ability to express ideas clearly and distinctly.

7.2 What is a thesis?

Because expository writing is writing in which the author takes a clear position, its most distinctive feature is the *thesis*. This is the statement, normally a single sentence, of the position the paper is to expose and support. It is sometimes called the main or controlling idea of the paper because it determines the content of the entire paper. Just as the Relevance Principle applies to discussions, so ideas, claims, and information in the paper should be relevant to the thesis; that is to say, the truth or falsity of the information included in the paper must have some bearing on the acceptability of the thesis.

One can write expository papers on a variety of subjects, and the tone of the paper may vary with the subject. For our purposes, the most common sort of expository paper is the "position paper." In a position paper, the thesis states a specific position on a controversial subject; e.g., "Abortion should be available to anyone" or "Virtue can be taught" or "Nuclear power plants should be banned." The purpose then is to convince a skeptical or unenlightened audience that the writer's position on the subject is the most defensible given the alternatives. Not all expository papers, however, are so overtly argumentative. For example, a student might write a paper showing how Plato's "Allegory of the Cave" can be applied to modern educational practice, or one might trace the image of a rose through the poems of Emily Dickinson. Nonetheless, no matter what the subject, if the paper is an expository paper, then it must take and defend a position, and the position must expose or enlighten the reader to new insights. In order to do so, any expository paper must have a non-trivial thesis.

Formulating an acceptable thesis is the most crucial step in the process of writing an expository paper. Without a good thesis, the project is doomed to failure; with it, the odds of producing an adequate paper are enhanced.

The first task is to distinguish between a *thesis statement* and a *topic sentence*. Students often believe they have formulated a thesis when they have only a *topic*. One essential difference between a topic and a thesis is that all theses are stated in complete sentences. Theses have subjects and predicates; a topic generally is not a sentence. For example, "Plato on education" is a topic, while "Plato's analysis of the learning process shows that curiosity or love is essential for learning" is a thesis statement that might be generated from the assigned topic "Plato on education."

Second, thesis statements are also frequently confused with a *statement of purpose*--a proposition in the form of a complete statement but one that does not express the writer's position on the topic. For example, "In this paper, I shall discuss Plato's theory of education" is a statement of purpose, not a thesis. It merely informs the reader of the topic to be addressed.

At a minimum, a thesis statement is a complete sentence that states the position to be taken and defended in the paper. A good thesis statement, however, will do more than that. It will also tell the reader why the position is important or interesting, as opposed to trivial or obvious. If a paper illuminates some disparity between appearance and reality or between conventional wisdom and truth, then it says something important or interesting. If what the paper says is obvious, then it is probably not worth saying.

One test for whether or not a thesis is trivial is to ask whether anyone would disagree with the position or whether anyone could write an intelligent paper taking a position in opposition to the thesis. If we cannot imagine strong counter arguments to the position, then perhaps the position is trivial.

There are certain words in English that generally indicate that a position is different from what is widely accepted. If words and phrases such as *but, however, nevertheless, although, on the contrary, while, in fact*, appear in a thesis, they probably indicate that the writer intends to say something interesting and original on the subject. Consider the following example:

Thesis: I shall argue that students should be voting members of faculty committees.

Improved thesis: While many faculty members oppose student participation on faculty committees, I shall argue that it is in the best interest of the school to have students as voting members of faculty committees.

While the first thesis does state a position, the improved thesis first tells the reader that there is a controversy and then informs the reader of the writer's position. This tells the reader that the essay promises to say something different from the conventional wisdom on the subject. It is a good idea to check each thesis to make sure that it indicates to the reader not only what the position is but also why the position is interesting or why the paper is important.

In addition to making sure that a thesis states a non-trivial position, a writer must also make sure that the terms in the thesis are clear and unambiguous. This is important because otherwise the reader might misunderstand the position in the paper. One way to clarify a thesis is to follow it with a sentence that restates and explains the position in other words. For example, the thesis "While many faculty members oppose student participation on faculty committees, I shall argue that it is in the best interest of the school to have students as voting members of faculty committees" could be followed by a sentence that clarifies and explains the phrase "best interest of the school": e.g., "That is to say, the school is likely to benefit from the input provided by persons who are currently part of its educational program." Such an explanation clarifies the thesis for both the writer and the reader. A clarified thesis is essential in order to know what arguments or information is needed to support it, as opposed to what is irrelevant.

Exercise 7.2

For each of the following topics formulate an "original" non-trivial thesis statement.

Example:

Topic: Aristotle's view of women.

Thesis: While Aristotle believed women were by their very nature lacking in rational capacities, in fact, women were made to appear irrational because they were denied access to education.

1. College athletics and success in life
2. Religion and television
3. The future of the family in the technological world
4. Pre-marital sex

7.3 Using Reasoning Strategies to Construct a Thesis

Knowing what a good thesis should be like is not the same as generating an actual thesis statement. One problem with constructing a thesis is that having an area of interest does not lead a writer directly to specific positions. For example, one may be interested in the question of whether or not marijuana use should be legal, but because of uncertainty whether it is a good idea to legalize marijuana, one does not know what position will be taken in the paper. While a thesis appears first in the paper, it comes last in the process of research and critical thinking.

Ultimately, when beginning to think about an issue, the writer will be confronted with the question of which position can be supported with the strongest arguments. So, in order to formulate a thesis, the writer first needs to examine both sides of the issue. In the spirit of John Stuart Mill, one should enumerate the reasons and arguments that can be given for making marijuana use legal and also those for making its use illegal. After evaluating the arguments on both sides, one will be in a much better position to write an expository paper. The writer will know what position appears easiest to defend and, just as importantly, what objections might be raised against the position. While reasons and arguments cannot be generated mechanically, certain strategies can help generate the needed ideas.

One strategy for generating ideas and arguments is to treat expository papers as if they were extended arguments. An expository paper is composed of a position for which writers give reasons. A paper's thesis, then, is analogous to an argument's conclusion. Similarly, the supporting paragraphs that comprise the body of the paper are analogous to an argument's premises, complex though they may be.

It is important to recognize this analogy because it re-emphasizes the value of stating a position or thesis clearly. For any argument, the nature of the conclusion will determine to a large extent what sorts of premises will provide support for the conclusion, what is relevant, and what is not. For example, if one wanted to support the position that marijuana use should be legalized, one would not spend time in the paper talking about the history of drug use in ancient cultures without showing how such historical information is relevant to the question of legalizing marijuana today. Information that is irrelevant to the chosen position should be excluded.

How is it then that we can generate the ideas and arguments that will help us to decide which position to support? One solution employs an understanding of valid deductive arguments. As we saw in Chapter Five, one quality of a valid deductive argument is that nothing is asserted in its conclusion that is not first stated in the premises. Conversely, if we begin with a conclusion, i.e., the thesis of the paper, we know that premises that provide adequate support for the conclusion must contain information about everything that is stated in the thesis.

We can understand what sort of information is needed by reflecting on the nature of a thesis. For example, if the thesis is "Marijuana use should be legal," we will need to include information about what makes something legal and about marijuana use. Remember that a thesis is a statement, and all statements have subjects (S) and predicates (P). The statement, "Marijuana use should be legalized," is comprised of a subject ("marijuana use") and a predicate ("should be legalized"). The statement claims that the subject "marijuana use" should become a member of the larger class of "legal acts." The arguments in support of such a thesis must show then, why "marijuana use" should be placed in the general class of "legal acts." To do this we must show that those qualities that define "legal acts" are also true of "marijuana use." We must show that because "marijuana use" has at least many of the same properties as any other "legal act," it should be placed in the same category. This strategy can be formalized as follows:

Major Premise: If something has properties a, b, c...., then it should be legalized.

Minor Premise: Marijuana use has properties a, b, c...

Conclusion: Hence, marijuana use should be legalized.

This manner of constructing arguments resembles the familiar form of a *Modus Ponens* argument:

p1. p -> q
p2. p
C. Hence q

Once we have set up our schema or argument form to support a particular thesis, the next question is how to decide what essential properties (a, b, c...) should define the thesis's predicate ("should be legalized"). Although there are no purely mechanical tricks to provide such information, here too there are some helpful strategies.

One strategy for defining or stating the essential properties of a thing or concept is to examine several unproblematic or paradigmatic examples of such a thing and to ask what properties these cases exemplify. For example, within the class of "legal practices," it seems unproblematic that drinking milk is and should be a "legal practice." We can examine these and other paradigmatic cases of legal practices and identify the properties these practices possess. Understanding why these unproblematic cases are legal may help us gain an understanding of the defining properties of legality in general.

After we have identified the essential or defining properties of the predicate term ("should be legalized"), we next see if the subject of the thesis (marijuana use) has those same essential properties. For example, we may decide that practices such as drinking milk are considered legal because they are not harmful to society, present no great risks to consumers, and would be difficult to regulate by law. Given this information, we can then formulate the major premise of the argument:

p1. *If* some practice
  a) does not harm society,
  b) does not present great risks to consumers, and
  c) would be difficult to regulate by law,

then it should be legal.

The next task is to formulate the second premise. The issue for the second premise is whether marijuana use has the properties (a, b, and c) that other legal practices have. The answer to this question will require research. If we decide that marijuana use does not have properties a, b, and c and also that these are the most important reasons for a practice being legal, then perhaps we should consider writing a paper that argues against legalizing marijuana. For such a paper, we would again begin by identifying those qualities many illegal practices have and then show that marijuana use shares many of those properties. Then, given our understanding of what makes an act legal, we could also show that marijuana use does not have the properties that other legal practices have, thus recognizing and fairly evaluating the opposing position on the issue.

Using these strategies, a writer will have some idea of how to generate ideas about topics, how to construct arguments to support theses, and how to evaluate the strength of the arguments. It is important to employ such an exercise prior to choosing a thesis and writing any paper.

Let's review the essential steps of the exercise. First look at the thesis (s is p) and identify the predicate term (p).

Second, state the definition or relevant defining qualities of the predicate term in the form of a conditional statement:

p1. *If* something has (or does not have) properties a, b, c...., *then* it is (or is not) a p.

(Fill in a, b, c... with appropriate properties which define p.)

Third, state the second premise, telling whether the subject term(s) of the thesis has or does not have those properties which characterize the predicate term:

p2. s has (or does not have) properties a, b, c.

Fourth, state the conclusion that the subject has or does not have the qualities of the predicate term:

C. s is (or is not) p.

The argument form is analogous to our standard *Modus Ponens* argument.

Exercise 7.3

After clarifying the positions, construct valid arguments for the following positions.

Example:

a. Conclusion: Slavery is immoral.

b. Universal Premise defining the predicate:
   1. *If* a practice treats humans as objects... (and has perhaps other added qualities), *then* the practice is immoral.

c. Second premise to relate the subject to the predicate:
   2. Slavery is a practice which treats humans as objects.
   3. Hence, slavery is immoral.

1. Courses in critical thinking should be required of all students.
2. Lying to people is immoral.
3. Participation in college athletics should be given academic credit.
4. Prostitution should be legal.
5. Adequate medical care should be guaranteed to all people.

7.4 Using Reasoning Strategies to Critique a Position

Our understanding of reasoning provides us with strategies for arguing not only for a position but also against a position. One strategy for critically evaluating a position is to employ the argument form of Chapter One's discussion of the Rejection Principle *Modus Tollens*, {[(p -> q) & -q] -> -p}. If one wants to argue that a given position is unacceptable or false, one can begin by showing that if the premise or position (p) is accepted, then certain consequences (q) would necessarily follow; i.e., p entails q, (p -> q). Next one can show that these consequences (q) are either false or so questionable that they are unacceptable to any rational person (-q). Because the consequent (q) is false, the premise (p) which implies the consequent (q) also must be false. In other words, if a position (p) logically implies a consequent (q) that is false, then (p) also must be false.

Along these same lines, Immanuel Kant once asserted that to will an end implies that one wills the means necessary to attain the end. If the means are lacking or unacceptable, the end should not be willed. The logical form of such thinking is also *Modus Tollens*, {[(p -> q) & -q] -> -p} where if a position (p) entails unacceptable consequences (q), then the position should be rejected. For example, if someone argued that we should support increased defense spending (p), one might point out that if we desire increased defense spending, we must also have increased taxes (q). But no one wants to increase taxes (-q). Hence, given the consequences, no one really desires increased defense spending (-p).

This sort of reasoning, in which we show that a position should be rejected because of the consequences it entails, is also useful when looking at ethical or policy decisions. If someone argues that people should never help others or, in other words, that people should be responsible only for themselves (p), one could point out that if this position were to become a rule which guided all behavior and no one helped anyone else (p), then the persons who held such a position could never expect others to help them, even if they were in dire need (q). But all people by nature desire help when in need (-q). Hence, no person should argue for the position that people should be responsible only for themselves (-p). In other words, ethical rule (p) implies (q), and (q) is counter to human nature, hence rule (p) must not be adopted. Those who endorse such a principle are usually those who assume that they will never need the help of others.

As we saw in our example of arguing against defense spending because such spending implies greater taxation, the logical strategy of employing *Modus Tollens* is very powerful when deciding practical issues. The logic of decision making often involves the relationship between desired ends and the means necessary to attain those ends. If one desires an end (p), one is logically committed to endorsing those means (q) *necessary* for attaining that end. If one is not willing to endorse the means necessary for attaining the end (-q), then one must give up the end (-p).

It is important to notice the significance of the word *necessary* in the foregoing statement. The word *necessary* means the same as "necessary condition" in that if something is indeed a necessary condition for an event and if the necessary condition is absent, then the event also is also absent. So when we apply our strategy to questions of practical decision making and show that to desire certain ends (p) entails that we desire those means (q) necessary for the end, we must be sure that the particular means (q) is *in fact* a necessary condition for (p). Otherwise, the truth of the first premise (p -> q) of the *Modus Tollens* argument (that the truth of p implies the truth of q) is questionable. If q is not a necessary condition for p, then p does not always imply q.

Given this understanding of the sentence above, let us return to our example of increased defense spending and raising taxes. The person who opposed defense spending (p) claimed that increased defense spending (p) necessarily implied that taxes be raised (q) and that no one desired that taxes be raised.

One way to counter such an argument is to ask whether or not p implies q, that is to ask whether q is in fact a necessary condition for p. We can always ask whether there are alternative means to our desired end of increased defense spending (p).

Someone might point out that rather than raising taxes, we could cut student loans, Medicare, and Social Security. Such cuts in social programs would raise the money needed to increase defense spending. The point is that in order to have a strong *Modus Tollens* argument, one must be sure that the means (q) are in fact *necessary* for the end in question (p).

In a complex situation such as this, in order to strengthen one's critique of the position (p), one should show that even though the position (p) implies many alternative necessary conditions (q v r v s), each alternative is false (or unacceptable); hence the position (p) must be rejected. The argument form would look like this:

p1. p -> (q v r v s)
p2. -q & -r & -s
C. -p

To use our example of increased defense spending, if people desire to increase defense spending (p), then they must either raise taxes or cut social programs. One would then argue that both raising taxes and cutting social programs are unacceptable (-q & -r); hence increased defense spending is not acceptable (-p) because of our unwillingness to accept any of the conditions necessary for its existence.

It should be clear by now that some easily understood strategies can be employed for arguing either for or against a position. Beyond *Modus Tollens* there are, of course, other formal strategies which can be employed, including *Modus Ponens* and complicated forms of Disjunctive Syllogisms. But for our purposes the strategies discussed here provide us with sufficiently powerful tools for both supporting and critiquing positions.

7.5 Hints on How to Write a Critical Paper

A critical paper is one which attempts to establish some conclusion or position by giving reasons for the position. The overall form of the paper will be that of an argument which first states the conclusion (the position or thesis) and then gives reasons for the position.

For example, let's assume that we have been asked to write a critical evaluation of the position held by an author we have studied. First, we will use the strategies discussed above to determine the thesis, the position we will take. Once we have determined what position to take, we spend sufficient time to choose the reasons, evidence, or support for the thesis. If something does not support the thesis, we should omit it.

After gathering support, we will begin the paper by clearly stating the thesis. Then we must clearly, distinctly, and fairly describe the position to support or attack. The reader needs to be able to understand what the issue is. Clarify or define terms where needed. If we are attacking the author's position, we should not overlook the arguments that he or she gives in support of the position. In other words, we must be fair.

After we have described the position accurately, the next part of the paper will consist of a critical evaluation of the position. If we are supporting a position, our reasons for support should include a consideration of possible objections and then a refutation of the objections. Once we have stated the author's position and the support or arguments for the position, we will need to identify any weaknesses in the position. This will be the heart of the critique. We can ask questions such as the following:

1. Are the premises used to support the position acceptable?
2. Do the premises entail or lend inductive support to the conclusion?

3. Does the author's position turn on hidden presuppositions which are questionable?

4. Does the author's position, if it were accepted as true, commit the author to consequences that are questionable or absurd?

5. Has the author left out certain relevant concerns which, if considered, would alter the conclusion?

6. Has the author used language that is so unclear that it is difficult to know what is being claimed or what the arguments are?

7. Has the author committed any informal fallacies?

The importance of asking these questions about our own writing is paramount. It is a useful way to deepen our understanding of an issue and to strengthen our position. Possible objections to our position must be clearly stated and effectively answered. When we put ourselves in the position of those who oppose our ideas, we see more clearly how to defend those ideas, or we may see that we should modify our position.

If we state our own opinions in the paper, we must make sure they too are backed up with adequate reasons and arguments. Above all else, we must write clearly and simply. Reading the paper aloud is a good way to discover lack of clarity and awkwardness of expression.

A critical paper will be divided into several parts. The parts tend to correspond to the "Critical Thinking Skills" studied in Chapter Two. First, there will be an introduction in which the position taken is stated in a thesis statement. Second, the paper will clarify the ideas in the thesis. Third, because the expository position cannot be trivial or obvious, the largest part of the paper will consist of reasons, evidence, and arguments in support of the thesis. Fourth, as critical thinkers, we know that for non-trivial issues there are competing viewpoints. So, objections or alternative points of view must be recognized in the paper and evaluated fairly. Finally, the paper will end with a conclusion that draws together what has been learned. A sample outline of such a paper follows:

I. Introduction and Thesis
II. Clarification of the Central Idea or Explanation of the Issue
III. Reason and Arguments for the Position
V. Possible Objections or Alternative Positions, with Replies
VI. Summary and Conclusion of Paper

By following such an outline, a critical paper will have the structure and unity of purpose that are essential to good expository writing.

7.5 Conclusion

Our knowledge of the formal approaches to constructing papers shows us that in the analysis of a thesis statement, the thesis, as all declarative sentences, consists of two parts: a subject and a predicate. Premises which support the thesis must contain information about both the subject and the predicate. They must show why the subject term, which is a particular object, concept, or class, is related to or contained in the more general predicate term. For example, when someone claims that "Russia is a communist state," the person is saying that there are certain properties (a, b, c...) which all things that are called "communist states" have and that Russia has these properties. Hence, if we were asked to argue that "Russia is a communist state," we would have to spend a fair amount of time clearly defining the predicate term "communist state" by stating the necessary conditions or essential properties which anything called "a communist state" must have. Then we would need to attempt to show through research that Russia (the subject) has those properties defined as necessary for being called a "communist state" (the predicate). It may turn out in the research, however, that those properties that are necessary for a state to be called a "communist state" are not present in the Russian system.

We should see that there is an obvious difference between having a genuine question and then doing research as opposed to simply having a prejudice and then doing anything to support that prejudice. The latter activity is not critical thinking; it is what we called in Chapter Two "critical thinking in the weak sense." An honest inquirer must seek to discover those defining properties necessary for a state being called "communist" and then, through further research, see if Russia has those properties. If a student is simply assigned the thesis, "prove that Russia is a communist state," the writer is forced dishonestly to choose only those defining properties for a "communist state" which Russia exemplifies.

When thinking critically, we soon see the complexity of these issues. To acknowledge the complexity leads to the honest recognition of the difficulty of supporting logically many of our most basic beliefs. For example, imagine the complexity of trying to write a paper which concluded that "Democracy is a just form of government." The initial task would be to define what properties made up "a just form of government." But each property would itself require arguments for support. For example, suppose someone believed that one of the properties of a just form of government was that it allowed the majority of people to be happy. If it is claimed that democracy is just because it creates human happiness, we know that the truth of such a claim depends upon our first being able to define happiness and then doing research to see if democracies tend to create such conditions for the majority of people. One would surely need to talk about satisfying basic needs, experiencing social, spiritual, ethical, and aesthetic pleasures, and perhaps having certain psychological attitudes, philosophical understanding, and the ability to labor in a meaningful and creative fashion. The point of such an exercise is to show how employing our logical tools turns apparently simple questions into more and more complex issues. Arguments become paragraphs, paragraphs become papers, and papers become books.

We can conclude, then, that knowledge of critical thinking techniques is of great importance. It provides us with the power to evaluate the reasoning (or lack of it) in others. This, no doubt, is an important albeit unpopular job in a free society. But beyond being able to evaluate the claims and arguments of others, critical thinking allows us to be more honest with ourselves. We should realize that the ideals of logic limit our own claims to certainty in many areas. How many of us can provide reasoned arguments, complete with adequate definitions, for the claims we make using such words as *freedom*, *justice*, *love*, *friendship*, and *truth*? Yet we must be able to define these general terms if we are to identify particular instances of them in the world.

Because this material has been covered so quickly, there is one final concern to keep in mind: one does not become an expert in critical thinking overnight any more than one becomes a virtuoso on a musical instrument after a few lessons. It is imperative that the skills acquired here be practiced over and over throughout one's college career and throughout life. As one becomes a master builder only by building, one becomes a rational thinker only by continually engaging in rational thought.

Introduction to Thomas Aquinas

Until about 1200 C.E., philosophical thought in Europe was Under the influence of Plato and Christianity, as illustrated by such Christian thinkers as St. Augustine. But in the 13th century the writings of Aristotle (Plato's most famous student) were re-discovered. Aristotle had rejected much of his master's teaching. While Plato believed that knowledge could not be gained through sense experience. Aristotle believed that sense experience was the foundation of knowledge. He believed that if proper precautions were employed, the world could be observed in an accurate fashion and that from these observations valid inferences could be made.

In his Summa Theologica, Aquinas set out to apply Aristotelian reasoning to the question of the existence of God. In each of the five arguments, Aquinas begins with what he considers to be an obvious truth gained from sense experience, e.g., that there is motion, that things have causes, that things go out of existence, that some things are better than other, or that natural events follow patterns. From these observations, he thought that one could infer the existence of God. He established a methodology called scholasticism based on the teaching system then used in schools. His method involves offering a thesis, then citing various authorities that disagreed with the thesis, then providing support for the thesis, and finally refuting the points raised against the original propositions. Because of Aquinas' work, philosophers and theologians began to use reasoning based on observation to understand both the world and, to a limited extent, the divine purpose in creating it, while still accepting the inherent reality of ideas and of such general concepts as the soul. Aquinas was canonized as a saint by the church in 1323, and his work is regarded as highly authoritative. Many Catholic theologians today consider themselves to be Thomists.

Thomas Aquinas

Five Proofs for the Existence of God *

Question II

THE EXISTENCE OF GOD

(In Three Articles)

BECAUSE the chief aim of sacred doctrine is to teach the knowledge of God not only as He is in Himself, but also as He is the beginning of things and their last end, and especially of rational creatures, as is clear from what has been already said, therefore, in our endeavor to expound this science, we shall treat: (1) of God; (2) of the rational creature's movement towards God; (3) of Christ Who as man is our way to God.

In treating of God there will be a threefold division:--

For we shall consider (1) whatever concerns the divine essence. (2) Whatever concerns the distinctions of Persons. (3) Whatever concerns the procession of creatures from Him.

Concerning the divine essence, we must consider:--

(1) Whether the proposition God *exists* is self-evident? (2) Whether it is demonstrable? (3) Whether God exists?

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* From The Summa Theologica, translated by the Fathers of English Dominican Province. Revised by Daniel J. Sullivan (Chicago: Encyclopedia Britannica, 1955), Great Books of the Western World, vol. 19, pp. 10-14.

First Article
WHETHER THE EXISTENCE OF GOD IS SELF-EVIDENT

We proceed thus to the first Article:--

Objection 1. It seems that the existence of god is self-evident. For those things are said to be self-evident to us the knowledge of which exists naturally in us, as we can see in regard to first principles. But as Damascene says, *the knowledge of God is naturally implanted in all.* Therefore the existence of God is self-evident.

Objection 2. Further, those things are said to be self-evident which are known as soon as the terms are know, which the Philosopher says is true of the first principles of demonstration. Thus, when the nature of a whole and of a part is known, it is at once recognized that every whole is greater than its parts. But as soon as the signification of the name *God* is understood, it is at once seen that god exists. For by this name is signified that thing than which nothing greater can be conceived. But that which exists actually and mentally is greater than that which exists only mentally. Therefore, since as soon as the name *God* is understood it exists mentally, it also follows that it exists actually. Therefore the proposition God *exists* is self-evident.

Objection 3. Further, the existence of truth is self-evident. For whoever denies the existence of truth grants that truth does not exist: and, if truth does not exist, then the proposition *Truth does not exist is true:* and if there is anything true there must be truth. But God is truth itself: *I am the way, the truth, and the life* (Jo. xiv. 6). Therefore God *exists* is self-evident.

On the contrary, No one can mentally admit the opposite of what is self-evident, as the Philosopher states concerning the first principles of demonstration. But the opposite of the proposition *God is* can be mentally admitted: *The fool said in his heart, There is no God* (Ps. lii. I). Therefore, that God exists is not self-evident.

I answer that, A thing can be self-evident in either of two ways: on the one hand, self-evident in itself, though not to us; on the other, self-evident in itself, and to us. A proposition is self-evident because the predicate is included in the essence of the subject: e.g., *Man is an animal,* for animal is contained in the essence of man. If, therefore, the essence of the predicate and subject be known to all, the proposition will be self-evident to all; as is clear with regard to the first principles of demonstration, the terms of which are certain common notions that no one is ignorant of, such as being and one-being, whole and part, and the like. If, however, there are some to whom the essence of the predicate and subject is unknown, the proposition will be self-evident in itself, but not to those who do not know the meaning of the predicate and subject of the proposition. Therefore, it happens, as Boethius says, that there are some motions of the mind which are common and self-evident only to the learned, as that incorporeal substances are not in space. Therefore I say that this proposition, *God exists*, of itself is self-evident, for the predicate is the same as the subject, because God is His own existence as will be hereafter shown. Now because we do not know the essence of God, the proposition is not self-evident to us, but needs to be demonstrated by things that are more known to us, though less known in their nature--namely, by His effects.

Reply obj. 1. To know that God exists in a general and confused way is implanted in us by nature, inasmuch as God is man's beatitude. For man naturally desires happiness, and what is naturally desired by man is naturally known by him. This, however, is not to know absolutely that God exists; just as to know that someone is approaching is not the same as to know that Peter is approaching, even though is Peter who is approaching; for there are many who imagine that man's perfect good, which is happiness, consists in riches, and others in pleasures, and others in something else.

Reply obj. 2. Perhaps not everyone who hears this name *God* understands it to signify something than which nothing greater can be thought, seeing that some have believed God to be a body. Yet, granted that everyone understands that by this name *God* is signified something than which nothing greater can be thought, nevertheless, it does not therefore follow that he understands that what the name signifies exists actually, but only that it exists mentally. Nor can it be argued that it actually exists, unless it be admitted that there actually exists something than which nothing greater can be thought; and this precisely is not admitted by those who hold that god does not exist.

Reply obj. 3. the existence of truth in general is self-evident but this existence of a Primal Truth is no self-evident to us.

Second Article
WHETHER IT CAN BE DEMONSTRATED THAT GOD EXISTS?

We proceed thus to the Second Article:--

Objection 1.It seems that the existence of God cannot be demonstrated. For is an article of faith that God exists. But what is of faith cannot be demonstrated, because a demonstration produces scientific knowledge, whereas faith is of the unseen, as is clear from the Apostle (Heb. xi. I). Therefore it cannot be demonstrated that God exists.

Objection 2.Further, essence is the middle term of demonstration. But we cannot know in what God's essence consists, but solely in what it does not consist, as Damascene says. Therefore we cannot demonstrate that God exists.

Objection 3.Further, if the existence of God were demonstrated, this could only be from His effects. But His effects are no proportioned to Him, since He is infinite and His effects are finite, and between the finite and infinite there is no proportion. Therefore, since a cause cannot be demonstrated by and effect not proportioned to it, it seems that the existence of God cannot be demonstrated.

On the contrary, The Apostle says; *The invisible things of Him are clearly seen, being understood by the things that are made* (Rom. i. 20). But this would not be unless the existence of God could be demonstrated through the things that are made; for the first thing we must know of anything is, whether it exists.

I answer that, Demonstration can be made in two ways: One is through the cause, and is called *propter quid*, and this is to argue from what is prior absolutely. The other is through the effect, and is called a demonstration *quia*, this is to argue from what is prior relatively only to us. When an effect is better known to us than its cause, from the effect we proceed to the knowledge of the cause. And from every effect the existence of its proper cause can be demonstrated, so long as its effects are better known to us; because, since every effect depends upon it cause, if the effect exists, the cause must pre-exist. Hence the existence of God, in so far as it is not self-evident to us, can be demonstrated from those of His effects which are known to us.

Reply Objection 1.The existence of God and other like truths about God, which can be known by natural reason, are not articles of faith, but are preambles to the articles;

for faith presupposes natural knowledge, even as grace presupposes nature and perfection of the perfectible. Nevertheless, there is nothing to prevent a man, who cannot grasp a proof, from accepting, as a matter of faith, something which in itself is capable of being scientifically known and demonstrated.

Reply Objection 2.When the existence of a cause is demonstrated from an effect, this effect takes the place of the definition of the cause in proving the cause's existence. This is especially the case in regard to God, because, in order to prove the existence of anything, it is necessary to accept as a middle term the meaning of the name, and not its essence, for the question of its essence follows on the question of its existence. Now the names given to god are derived from His effects, as will be later shown. Consequently, in demonstrating the existence of God from His effects, we may take for the middle term the meaning of the name *God*.

Reply Objection 3.From effects not proportioned to the cause no perfect knowledge of that cause can be obtained. Yet from every effect the existence of the cause can be clearly demonstrated, and so we can demonstrate the existence of God from His effects; though from them we cannot know God perfectly as He is in His essence.

Third Article

WHETHER GOD EXISTS?

We proceed thus to the Third Article:--

Objection 1.It seems that god does not exist; because if one of two contraries be infinite, the other would be altogether destroyed. But the name *God* means that He is infinite goodness. If, therefore, God existed, there would be no evil discoverable; but there is evil in the world. Therefore God does not exist.

Objection 2.Further, it is superfluous to suppose that what can be accounted for by a few principles has been produced by many. But it seems that everything we see in the world can be accounted for by other principles, supposing God did not exist. For all natural things can be reduced to one principle, which is nature; and all voluntary things can be reduced to one principle, which is human reason, or will. Therefore there is no need to suppose God's existence.

On the contrary, It is said in the person of God: *I am Who I am* (Exod. iii. 14).

I answer that, The existence of God can be proved in five ways.

The first and more manifest way is the argument from motion. It is certain, and evident to our senses, that in the world some things are in motion. Now whatever is moved is moved by another, for nothing can be moved except it is in potentiality to that towards which it is moved; whereas a thing moves inasmuch as it is in act. For motion is nothing else than the reduction of something from potentiality to actuality. But nothing can be reduced from potentiality to actuality, except by something in a state of actuality. Thus that which is actually hot, and fire, makes wood, which is potentially hot, to be actually hot, and thereby moves and changes it. Now it is not possible that the same thing should be at once in actuality and potentiality in the same respect, but only in different respects. For what is actually hot cannot simultaneously be potentially hot; but it is simultaneously potentially cold. It is therefore impossible that in the same respect and in the same way a thing should be both mover and moved, i.e., that it should move itself. Therefore, whatever is moved must be moved by another. If that by which it is moved be itself moved, then this also must needs by moved by another, and that by another again. But this cannot go on to infinity, because then there would be no first mover, and, consequently, no other mover, seeing that subsequent movers move only inasmuch as they are moved by the first mover; as the staff moves only because it is moved by the hand. Therefore it is necessary to arrive at a first mover, moved by no other; and this everyone understands to be God.

The second way is from the nature of efficient (or creative) cause. In the world of sensible things we find there is an order of efficient or creative causes. There is no case known (neither is it, indeed, possible) in which a thing is found to be the efficient cause (creator) of itself; for so it would be prior to itself, which is impossible. Now in efficient causes, it is not possible to go on to infinity, because in all efficient causes following in order, the first is the cause of the intermediate cause, and the intermediate is the cause of the ultimate cause, whether the intermediate cause be several or one only. Now to take away the cause is to take away the effect. Therefore, if there be no first cause among the efficient causes, there will be no ultimate, nor any intermediate cause. But if in efficient causes it is possible to go on to infinity, there will be no first efficient cause, neither will there be an ultimate effect, nor any intermediate efficient causes; all of which is plainly false. Therefore it is necessary to admit a first efficient (creative) cause, to which everyone gives the name of God.

The third way is taken from possibility and necessity, and runs thus. We find in nature things that are possible to be and not to be, since they are found to be generated, and to be corrupted and consequently, it is possible for them to be and not to be. But it is impossible for these always to exist, for that which can not-be at some time is not. Therefore, if everything can not-be, then at one time there was nothing in existence. Now if this were true, even now there would be nothing in existence, because that which does not exist begins to exist only through something already existing. Therefore, if at one time nothing was in existence, it would have been impossible for anything to have begun to exist; and thus even now nothing would be in existence--which is absurd. Therefore, not all beings are merely possible, but there must exist something the existence of which is necessary. But every necessary thing either has its necessity caused by another, or not. Now it is impossible to go on to infinity in necessary things which have their necessity caused by another, as has been already proved in regard to efficient causes. Therefore we cannot but admit the existence of some being having of itself its own necessity, and not receiving it from another, but rather causing in others their necessity. This all men speak of as God.

The fourth way is taken from the gradation to be found in things. Among beings there are some more and some less good, true, noble, and the like. But *more* and *less* are predicted of different things according as they resemble in their different ways something which is the maximum, as a thing is said to be hotter according as it more nearly resembles that which is hottest; so that there is something which is truest, something best, something noblest, and , consequently, something which is greatest in being, as it is written in Metaph. ii. Now the maximum in any genus is the cause of all in that genus, as fire, which is the maximum of heat, is the cause of all hot things, as is said in the same book. Therefore there must also be something which is to all beings the cause of their being, goodness, and every other perfection; and this we call God.

The fifth way is taken from the governance of the world. We see that things which lack knowledge, such as natural bodies, act for and end, and this is evident from their acting always, or nearly always, in the same way, so as to obtain the best result. Hence it is plain that they achieve their end, not fortuitously, by designedly. Now whatever lacks knowledge cannot move towards an end, unless it be directed by some being endowed with knowledge and intelligence; as the arrow is directed by the archer. Therefore some intelligent being exists by whom all natural things are directed to their end; and this being we call God.

Reply Objection 1.As Augustine says: *Since God is the highest good, He would not allow any evil to exist in His works, unless His omnipotence and goodness were such as to bring good even out of evil.* This is part of the infinite goodness of God, that He should allow evil to exist, and out of it produce good.

Reply Objection 2.Since nature works for a determinate end under the direction of a higher agent, whatever is done by nature must be traced back to God as to its first cause. So likewise whatever is done voluntarily must be traced backed to some higher cause other than human reason and will, since these can change and fail; for all things that are changeable and capable of defect must be traced bake to an immovable and self-necessary first principle, as has been shown.

WHY I AM NOT A CHRISTIAN *

Bertrand Russell

Bertrand Russell (1872-1970) was one of the most prominent philosophers of the twentieth century. He is the author of numerous books on a wide variety of philosophical and social issues. He is known to the general public for his outspoken stands on religion, marriage, and the banning of the nuclear bomb. In 1950 he was awarded the Nobel Prize for Literature.

As your Chairman has told you, the subject about which I am going to speak to you tonight is "Why I Am Not A Christian." Perhaps it would be as well, first of all, to try to make out what one means by the word Christian. It is used these days in a very loose sense by a great many people. Some people mean no more by it than a person who attempts to live a good life. In that sense I suppose there would be Christians in all sects and creeds; but I do not think that that is the proper sense of the word, if only because it would imply that all the people who are not Christians--all the Buddhists, Confucians, Mohammedans, and so on--are not trying to live a good life. I do not mean by a Christian any person who tries to live decently according to his lights. I think that you must have a certain amount of definite belief before you have a right to call yourself a Christian. The word does not have quite such a full-blooded meaning now as it had in the times of St. Augustine and St. Thomas Aquinas. In those days, if a man said that he was a Christian it was known what he meant. You accepted a whole collection of creeds you believed with the whole strength of your convictions.

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* From Bertrand Russell, Why I am not a Christian and Other Essays on Religion and Related Subjects, Ed., Paul Edwards. (New York: Simon and Schuster, 1957). Used with permission of the publisher.

WHAT IS A CHRISTIAN?

Nowadays it is not quite that. We have to be a little more vague in our meaning of Christianity. I think, however, that there are two different items which are quite essential to anybody calling himself a Christian. The first is one of a dogmatic nature--namely, that you must believe in God and immortality. If you do not believe in those two things, I do not think that you can properly call yourself a Christian. Then, further than that, as the name implies, you must have some kind of belief about Christ. The Mohammedans, for instance, also believe in God and in immortality, and yet they would not call themselves Christians. I think you must have at the very lowest the belief that Christ was, if not divine, at least the best and wisest of men. If you are not going to believe that much about Christ, I do not think you have any right to call yourself a Christian. Of course, there is another sense, which you find in Whitaker's Almanack and in geography books, where the population of the world is said to be divided into Christians, Mohammedans, Buddhists, fetish worshipers, and so on; and in that sense we are all Christians. The geography books count us all in, but that is purely geographical sense, which I suppose we can ignore. Therefore I take it that when I tell you why I am not a Christian I have to tell you two different things: first, why I do not believe in God and in immortality; and secondly, why I do not thing that Christ was the best and wisest of men, although I grant him a very high degree of moral goodness.

But for the successful efforts of unbelievers in the past, I could not take so elastic a definition of Christianity as that. As I said before, in olden days it had a much more full-blooded sense. For instance, it included the belief in hell. Belief in eternal hell-fire was an essential item of Christian belief until pretty recent times. In this country, as you know, it ceased to be an essential item because of a decision of the Privy Council, and from that decision the Archbishop of Canterbury and the Archbishop of York dissented; but in this country our religion is settled by Act of Parliament, and therefore the Privy Council was able to override their Graces and hell was no longer necessary to a Christian. Consequently I shall not insist that a Christian must believe in hell.

THE EXISTENCE OF GOD

To come to this question of the existence of God: it is a large and serious question, and if I were to attempt to deal with it in any adequate manner I should have to keep you here until Kingdom Come, so that you will have to excuse me if I deal with it in a somewhat summary fashion. You know, of course, that the Catholic Church has laid it down as a dogma that the existence of God can be proved by the unaided reason. That is a somewhat curious dogma, but it is one of their dogmas. They had to introduce it because at one time the freethinkers adopted the habit of saying that there were such and such arguments which mere reason might urge against the existence of God, but of course they knew as a matter of faith that God did exist. The arguments and the reasons were set out at great length, and the Catholic Church felt that they must stop it. Therefore they laid it down that the existence of God can be proved by the unaided reason and they have had to set up what they considered were arguments to prove it. There are, of course, a number of them, but I shall take only a few.

THE FIRST-CAUSE ARGUMENT

Perhaps the simplest and easiest to understand is the argument of the First Cause. (It is maintained that everything we see in this world has a cause, and as you go back in the chain of causes further and further you must come to a First Cause, and to that First Cause you give the name of God.) That argument, I suppose, does not carry very much weight nowadays, because, in the first place, cause is not quite what it used to be. The philosophers and the men of science have got going on cause, and it has not anything like the vitality it used to have; but, apart from that, you can see that the argument that there must be a First Cause is one that cannot have any validity. I may say that when I was a young man and was debating these questions very seriously in my mind, I for a long time accepted the argument of the First Cause, until one day, at the age of eighteen, I read John Stuart Mill's Autobiography, and I there found this sentence: "My father taught me that the question 'Who made me?' cannot be answered, since it immediately suggests the further question 'Who made God?'" That very simple sentence showed me, as I still think, the fallacy in the argument of the First Cause. If everything must have a cause, then God must have a cause. If there can be anything without a cause, it may just as well be the world as God, so that there cannot be any validity in that argument. It is exactly of the same nature as the Hindu's view, that the world rested upon an elephant and the elephant rested upon a tortoise; and when they said, "How about the tortoise?" the Indian said, "Suppose we change the subject." The argument is really no better than that. There is no reason why the world could not have come into being without a cause; nor, on the other hand, is there any reason why it should not have always existed. There is no reason to suppose that the world had a beginning at all. The idea that things must have a beginning is really due to the poverty of our imagination. Therefore, perhaps, I need not waste any more time upon the argument about the First Cause.

THE NATURAL-LAW ARGUMENT

Then there is a very common argument from natural law. That was a favorite argument all through the eighteenth century, especially under the influence of Sir Isaac Newton and his cosmogony. People observed the planets going around the sun according to the law of gravitation, and they thought that God had given a behest to these planets to move in that particular fashion, and that was why they did so. That was, of course, a convenient and simple explanation that saved them the trouble of looking any further for explanations of the law of gravitation. Nowadays we explain the law of gravitation in a somewhat complicated fashion that Einstein has introduced. I do not propose to give you a lecture on the law of gravitation, as interpreted by Einstein, because that again would take some time; at any rate, you no longer have the sort of natural law that you had in the Newtonian system, where, for some reason that nobody could understand, nature behaved in a uniform fashion. We now find that a great many things we thought were natural laws are really human conventions. You know that even in the remotest depths of stellar space there are still three feet to a yard. That is, no doubt, a very remarkable fact, but you would hardly call it a law of nature. And a great may things that have been regarded as laws of nature are of that kind. On the other hand, where you can get down to any knowledge of what atoms actually do, you will find they are much less subject to law than people thought, and that the laws at which you arrive are statistical averages of just the sort that would emerge from chance. There is, as we all know, a law that if you throw dice you will get double sixes only about once in thirty-six times, and we do not regard that as evidence that the fall of the dice is regulated by design; on the contrary, if the double sixes came every time we should think that there was design. The laws of nature are of that sort as regards a great many of them. They are statistical averages such as would emerge from the laws of chance; and that make this whole business of natural law much less impressive than it formerly was. Quite apart from that, which represents the momentary state of science that may change tomorrow, the whole idea that natural laws imply a lawgiver is due to a confusion between natural and human laws. Human laws are behests commanding you to behave a certain way, in which way you may choose to behave, or you may choose not to behave; but natural laws are a description of how things do in fact behave, and being a mere description of what they in fact do, you cannot argue that there must be somebody who told them to do that, because even supposing that there were, you are then faced with the question, "Why did God issue just those natural laws and no others?" If you say that he did it simply form his own good pleasure, and without any reason, you then find that there is something which is not subject to law, and so your train of natural law is interrupted. If you say, as more orthodox theologians do, that in all the laws which God issues he had a reason for giving those laws rather than others--the reason, of course, being to create the best universe, although you would never think it to look at it--if there were a reason for the laws which God gave, then God himself was subject to law, and therefore you do not get any advantage by introducing God as an intermediary. You have really a law outside and anterior to the divine edicts, and God does not serve your purpose, because he is not the ultimate lawgiver. In short, this whole argument about natural law no longer has anything like the strength that it used to have. I am traveling on in time in my review of the arguments. The arguments that are used for the existence of God change their character as time goes on. They were at first hard intellectual arguments embodying certain quite definite fallacies. As we come to modern times they become less respectable intellectually and more and more affected by a kind of moralizing vagueness.

THE ARGUMENT FROM DESIGN

The next step in this process brings us to the argument from design. You all know the argument from design: everything in the world is made just so that we can manage to live in the world, and if the world was ever so little different, we could not manage to live in it. That is the argument from design. It sometimes takes a rather curious form; for instance, it is argued that rabbits have white tails in order to be easy to shoot. I do no know how rabbits would view that application. It is an easy argument to parody. You all know Voltaire's remark, that obviously the nose was designed to be such as to fit spectacles. That sort of parody has turned out to be not nearly so wide of the mark as it might have seemed in the eighteenth century, because since the time of Darwin we understand much better why living creatures are adapted to their environment. It is not that their environment was made to be suitable to them but that they grew to be suitable to it, and that is the basis of adaptation. There is no evidence of design about it.

When you come to look into this argument from design, it is a most astonishing thing that people can believe that this world, with all the things that are in it, with all its defects, should be the best that omnipotence and omniscience have been able to produce in millions of years. I really cannot believe it. Do you think that, if you were granted omnipotence and omniscience and millions of years in which to perfect your world, you could produce nothing better than the Ku Klux Klan or the Fascists? Moreover, if you accept the ordinary laws of science, you have to suppose that human life and life in general on this planet will die out in due course: it is a stage in the decay of the solar system; at a certain stage of decay you get the sort of conditions of temperature and so forth which are suitable to protoplasm, and there is life for a short time in the life of the whole solar system. You see in the moon the sort of things to which the earth is tending--something dead, cold, and lifeless.

I am told that that sort of view is depressing, and people will sometimes tell you that if they believed that, they would not be able to go on about what is going to happen millions of years hence. Even if they think they are worrying much about that, they are really deceiving themselves. They are worried about something much more mundane, or it may merely be a bad digestion; but nobody is really seriously rendered unhappy by the thought of something that is going to happen to this world millions and millions of years hence. Therefore, although it is of course a gloomy view to suppose that life will die out--at least I suppose we may say so, although sometimes when I contemplate the things that people do with their lives I think it is almost a consolation--it is not such as to render life miserable. If merely makes you turn your attention to other things.

THE MORAL ARGUMENTS FOR DEITY

Now we reach one stage further in what I shall call the intellectual descent that the Theists have made in their argumentations, and we come to what are called the moral arguments for the existence of God. You all know, of course, that there used to be in the old days three intellectual arguments for the existence of God, all of which were disposed of by Immanuel Kant in the Critique of Pure Reason; but no sooner had he disposed of those arguments than he invented a new one, a moral argument, and that quite convinced him. He was like many people: in intellectual matters he was skeptical, but in moral matters he believed implicitly in the maxims that he had imbibed at his mother's knee. That illustrates what the psychoanalysts so much emphasize--the immensely stronger hold upon us that our early associations have than those of later times.

Kant, as I say, invented a new moral argument for the existence of God, and that in varying forms was extremely popular during the nineteenth century. It has all sorts of forms. One form is to say that there would be no right or wrong unless God existed. I am not for the moment concerned with whether there is a difference between right and wrong, or whether there is not: that is another question. The point I am concerned with is that, if you are quite sure there is a difference between right and wrong, you are then in this situation: Is that difference due to God's fiat or is it not? If it is due to God's fiat, then for God himself there is no difference between right and wrong, and it is no longer a significant statement to say that God is good. If you are going to say, as theologians do, that God is good, you must then say that right and wrong have some meaning which is independent of God's fiat, because God's fiats are good and not bad independently of the mere fact that he made them. If you are going to say that, you will then have to say that it is not only though God that right and wrong came into being, but that they are in their essence logically anterior to God. You could, of course, if you liked, say that there was a superior deity who gave orders to the God who made this world, or could take up the line that some of the gnostics took up--a line which I often thought was a very plausible one--that as a matter of fact this world that we know was made by the devil at a moment when God was not looking. There is a good deal to be said for that, and I am not concerned to refute it.

THE ARGUMENT FOR THE REMEDYING OF INJUSTICE

Then there is another very curious form of moral argument, which is this: they say that the existence of God is required in order to bring justice into the world. In the part of this universe that we know there is great injustice, and often the good suffer, and often the wicked prosper, and one hardly knows which of those is the more annoying; but if you are going to have justice in the universe as a whole you have to suppose a future life to redress the balance of life here on earth. So they say that there must be a God, and there must be heaven and hell in order that in the long run there may be justice. That is a very curious argument. If you looked at the matter from a scientific point of view, you would say,"After all, I know only this world. I do not know about the rest of the universe, but so far as one can argue at all on probabilities one would say that probably this world is a fair sample, and if there is injustice here the odds are that there is injustice elsewhere also." Supposing you got a crate of oranges that you opened, and you found all the top layer of oranges bad, you would not argue, "The underneath ones must be good, so as to redress the balance." You would say, "Probably the whole lot is a bad consignment"; and that is really what a scientific person would argue about the universe. He would say, "Here we find in this world a great deal of injustice, and so far as that goes that is a reason for supposing that justice does not rule in the world; and therefore so far as it goes it affords a moral argument against deity and not in favor of one." Of course I know that the sort of intellectual arguments that I have been talking to you about are not what really moves people. What really moves people to believe in God is not any intellectual argument at all. Most people believe in God because they have been taught from early infancy to do it, and that is the main reason.

Then I think that the next most powerful reason is the wish for safety, a sort of feeling that there is a big brother who will look after you. That plays a very profound part in influencing people's desire for a belief in God.

THE CHARACTER OF CHRIST

I now want to say a few words upon a topic which I often think is not quite sufficiently dealt with by Rationalists, and that is the question whether Christ was the best and the wisest of men. It is generally taken for granted that we should all agree that that was so. I do not myself. I think that there are a good many points upon which I agree with Christ a great deal more than the professing Christians do. I do not know that I could go with Him all the way, but I could go with Him much further than most professing Christians can. You will remember that He said, "Resist not evil: but whosoever shall smite thee on thy right cheek, turn to him the other also." That is not a new precept or a new principle. It was used by Lao-tse and Buddha some 500 or 600 years before Christ, but it is not a principle which as a matter of fact Christians accept. I have no doubt that the present Prime Minister, for instance, is a most sincere Christian, but I should not advise any of you to go and smite him on one cheek. I think you might find that he thought this text was intended in a figurative sense.

Then there is another point which I consider excellent. You will remember that Christ said, "Judge not lest ye be judged." That principle I do not think you would find was popular in the law courts of Christian countries. I have known in my time quite a number of judges who were very earnest Christians, and none of them felt that they were acting contrary to Christian principles in what they did. Then Christ says, "Give to him that asketh of thee, and from him that would borrow of thee turn not thou away." That is a very good principle. Your Chairman has reminded you that we are not here to talk politics, but I cannot help observing that the last general election was fought on the question of how desirable it was to turn away from him that would borrow of thee, so that one must assume that the Liberals and Conservatives of this country are composed of people who do not agree with the teaching of Christ, because they certainly did very emphatically turn away on that occasion.

Then there is one other maxim of Christ which I think has a great deal in it, but I do not find that it is very popular among some of our Christian friends. He says, "If thou wilt be perfect, go and sell that which thou hast, and give to the poor." That is a very excellent maxim, but as I say, it is not much practiced. All these, I think, are good maxims, although they are a little difficult to live up to. I do not profess to live up to them myself; but then, after all, it is not quite the same thing as for a Christian.

DEFECTS IN CHRIST'S TEACHING

Having granted the excellence of these maxims, I come to certain points in which I do not believe that one can grant either the superlative wisdom or the superlative goodness of Christ as depicted in the Gospels; and here I may say that one is not concerned with the historical question. Historically it is quite doubtful whether Christ ever existed at all, and if He did we do not know anything about Him, so that I am not concerned with the historical question, which is a very difficult one. I am concerned with Christ as He appears in the Gospels, taking the Gospel narrative as it stands, and there one does find some things that do not seem to be very wise. For one thing, He certainly thought that His second coming would occur in clouds of glory before the death of all the people who were living at that time. There are a great many texts that prove that. He says, for instance, "Ye shall not have gone over the cities of Israel till the Son of Man be come." Then He says, "There are some standing here which shall not taste death till the Son of Man comes into His kingdom"; and there are a lot of places where it is quite clear that He believed that His second coming would happen during the lifetime of many then living. That was the belief of His earlier followers, and it was the basis of a good deal of His moral teaching. When He said, "Take no thought for the morrow," and things of that sort, it was very largely because He thought that the second coming was going to be very soon, and that all ordinary mundane affairs did not count. I have, as a matter of fact, known some Christians who did believe that the second coming was imminent. I knew a person who frightened his congregation terribly by telling them that the second coming was very imminent indeed, but they were much consoled when they found that he was planting trees in his garden. The early Christians did really believe it, and they did abstain from such things as planting trees in their gardens, because they did accept from Christ the belief that the second coming was imminent. In that respect, clearly He was not so wise as some other people have been, and He was certainly not superlatively wise.

THE MORAL PROBLEM

Then you come to moral questions. There is one very serious defect to my mind in Christ's moral character, and that is that He believed in hell. I do not myself feel that any person who is really profoundly humane can believe in everlasting punishment. Christ certainly as depicted in the Gospels did believe in everlasting punishment, and one does find repeatedly a vindictive fury against those people who would not listen to His preaching-- an attitude which is not uncommon with preachers, but which does somewhat detract from superlative excellence. You do not, for instance, find that attitude in Socrates. You find him quite bland and urbane toward the people who would not listen to him; and it is, to my mind, far more worthy of a sage to take that line than to take the line of indignation. You probably all remember the sort of things that Socrates was saying when he was dying, and the sort of things that he generally did say to people who did not agree with him.

You will find that in the Gospels Christ said, "Ye serpents, ye generation of vipers, how can ye escape the damnation of hell." That was said to people who did not like His preaching. It is not really to my mind quite the best tone, and there are a great many of these things about hell. There is, of course, the familiar text about the sin against the Holy Ghost: "Whosoever speaketh against the Holy Ghost it shall not be forgiven him neither in this World nor in the world to come." That text has caused an unspeakable amount of misery in the world, for all sorts of people have imagined that they have committed the sin against the Holy Ghost, and thought that it would not be forgiven them either in the world or in the world to come. I really do not think that a person with a proper degree of kindliness in his nature would have put fears and terrors of that sort into the world.

Then Christ says,"The Son of Man shall send forth His angels, and they shall gather out of His kingdom all things that offend, and them which do iniquity, and shall cast them into a furnace of fire; there shall be wailing and gnashing of teeth"; and He goes on about the wailing and gnashing of teeth. It comes in one verse after another, and it is quite manifest to the reader that there is a certain pleasure in contemplating wailing and gnashing of teeth, or else it would not occur so often. Then you all, of course, remember about the sheep and the goats; how at the second coming He is going to divide the sheep from the goats, and He is going to say to the goats, "Depart from me, ye cursed, into everlasting fire." He continues, "And these shall go away into everlasting fire." Then He says again, "If thy hand offend thee, cut it off; it is better for thee to enter into life maimed, than having two hands to go into hell, into the fire that never shall be quenched; where the worm dieth not and the fire is not quenched." He repeats that again and again also. I must say that I think all this doctrine, that hell-fire is a punishment for sin, is a doctrine of cruelty. It is a doctrine that put cruelty into the world and gave the world generations of cruel torture; and the Christ of the Gospels, if you could take Him as His chroniclers represent Him, would certainly have to be considered partly responsible for that.

There are other things of less importance. There is the instance of the Gadarene swine, where it certainly was not very kind to the pigs to put the devils into them and make them rush down the hill to the sea. You must remember that He was omnipotent, and He could have made the devils simply go away; but He chose to send them into the pigs. Then there is the curious story of the fig tree, which always rather puzzled me. You remember what happened about the fig tree. "He was hungry; and seeing a fig tree afar off having leaves, He came if haply He might find anything thereon; and when He came to it He found nothing but leaves, for the time of figs was not yet. And Jesus answered and said unto it: 'No man eat fruit of thee hereafter for ever'...and Peter...saith unto Him: 'Master, behold the fig tree which thou cursedst is withered away.'" This is a very curious story, because it was not the right time of year for figs, and you really could not blame the tree. I cannot myself feel that either in the matter of wisdom or in the matter of virtue Christ stands quite as high as some other people known to history. I think I should put Buddha and Socrates above Him in those respects.

THE EMOTIONAL FACTOR

As I said before, I do not think that the real reason why people accept religion has anything to do with argumentation. They accept religion on emotional grounds. One is often told that t is a very wrong thing to attack religion, because religion makes men virtuous. So I am told; I have not noticed it. You know, of course, the parody of that argument in Samuel Butler's book, Erewhon Revisited. You will remember that in Erewhon there is a certain Higgs who arrives in a remote country, and after spending some time there he escapes from that country in a balloon. Twenty years later he comes back to that country and finds a new religion in which he is worshiped under the name of the "Sun Child," and it is said that he ascended into heaven. He finds that the Feast of the Ascension is about to be celebrated, and he hears Professors Hanky and Panky say to each other that they never set eyes on the man Higgs, and they hope they never will; but they are the high priests of the religion of the Sun Child. He is very indignant, and he comes up to them, and he says, "I am going to expose all this humbug and tell the people of Erewhon that it was only I, the man Higgs, and I went up in a balloon." He was told, "You must not do that, because all the morals of this country are bound round this myth, and if they once know that you did not ascend into heaven they will all become wicked": and so he is persuaded of that and he goes quietly away.

That is the idea--that we should all be wicked if we did not hold to the Christian religion. It seems to me that the people who have held to it have been for the most part extremely wicked. You find this curious fact, that the more intense has been the religion of any period and the more profound has been the dogmatic belief, the greater has been the cruelty and the worse has been the state of affairs. In the so-called ages of faith, when men really did believe the Christian religion in all its completeness, there was the Inquisition, with its tortures; there were millions of unfortunate women burned as witches; and there was every kind of cruelty practiced upon all sorts of people in the name of religion.

You find as you look around the world that every single bit of progress in humane feeling, every improvement in the criminal law, every step toward the diminution of war, every step toward better treatment of the colored races, or every mitigation of slavery, every moral progress that there has been in the world, has been consistently opposed by the organized churches of the world. I say quite deliberately that the Christian religion, as organized in its churches, has been and still is the principal enemy of moral progress in the world.

HOW THE CHURCHES HAVE RETARDED PROGRESS

You may think that I am going too far when I say that that is still so. I do not think that I am. Take one fact. You will bear with me if I mention it. It is not a pleasant fact, but the churches compel one to mention facts that are not pleasant. Supposing that in this world that we live in today an inexperienced girl is married to a syphilitic man; in that case the Catholic Church says, "The is an indissoluble sacrament. You must endure celibacy or stay together. And if you stay together, you must not use birth control to prevent the birth of syphilitic children." Nobody whose natural sympathies have not been warped by dogma, or whose moral nature was not absolutely dead to all sense of suffering, could maintain that it is right and proper that that state of things should continue.

That is only an example. There are a great many ways in which, at the present moment, the church, by its insistence upon what it chooses to call morality, inflicts upon all sorts of people undeserved and unnecessary suffering. And of course, as we know, it is in its major part an opponent still of progress and of improvement in all the ways that diminish suffering in the world, because it has chosen to label as morality a certain narrow set of rules of conduct which have nothing to do with human happiness; and when you say that this or that ought to be done because it would make for human happiness, they think that has nothing to do with the matter at all. "What has human happiness to do with morals? The object of morals is not to make people happy."

FEAR, THE FOUNDATION OF RELIGION

Religion is based, I think, primarily and mainly upon fear. It is partly the terror of the unknown and partly, as I have said, the wish to feel that you have a kind of elder brother who will stand by you in all our troubles and disputes. Fear is the basis of the whole thing--fear of the mysterious, fear of defeat, fear of death. Fear is the parent of cruelty, and therefore it is no wonder if cruelty and religion have gone hand in hand. It is because fear is at the basis of those two things. In this world we can now begin a little to understand things, and a little to master them by help of science, which has forced its way step by step against the Christian religion, against the churches, and against the opposition of all the old precepts. Science can help us to get over this craven fear in which mankind has lived for so many generations. Science can teach us, and I think our own hearts can teach us, no longer to look around for imaginary supports, no longer to invent allies in the sky, but rather to look to our own efforts here below to make this world a fit place to live in, instead of the sort of place that the churches in all these centuries have made it.

WHAT WE MUST DO

We want to stand upon our own feet and look fair and square at the world--its good facts, its bad facts, its beauties, and its ugliness; see the world as it is and be not afraid of it. Conquer the world by intelligence and not merely by being slavishly subdued by the terror that comes from it. The whole conception of God is a conception derived from the ancient Oriental despotisms. It is a conception quite unworthy of free men. When you hear people in church debasing themselves and saying that they are miserable sinners, and all the rest of it, it seems contemptible and not worthy of self-respecting human beings. We ought to stand up and look the world frankly in the face. We ought to make the best we can of the world, and if it is not so good as we wish, after all it will still be better than what these others have made of it in all these ages. A good world needs knowledge, kindliness, and courage; it does not need a regretful hankering after the past or a fettering of the free intelligence by the words uttered long ago by ignorant men. It needs a fearless outlook and a free intelligence. It needs hope for the future, not looking back all the time toward a past that is dead, which we trust will be far surpassed by the future that our intelligence can create.

Introduction to Plato's "Apology" and "Crito"

The first major philosopher in the Western tradition was Socrates (469-399 B.C.E.). Socrates, like Buddha (560-477 B.C.E.) and Jesus (4 B.C.E.-29 C.E.), wrote nothing. What we know of Socrates' life and his ideas is largely taken from the dialogues of his student Plato (429-347 B.C.E.). The accuracy of the dialogues is of course subject to question, but Plato's representation of Socrates' life seems accurate because the dialogues agree with other independent accounts. But, if we are to believe Plato, an accurate account of Socrates' ideas is not the purpose of the dialogues. In one of his letters, he tells us that they were written as teaching tools to be used in his Academy, the first university. As teaching tools they attempt to raise important issues, show how some common answers are inadequate, and then leave the reader to find more adequate answers.

Socrates was not the first philosopher in the Western tradition. There were others such as Thales, Heraclitus, and Parmenides who engaged in philosophical inquiry. These thinkers were concerned with the nature of reality: whether all was in fact changeless or all was in flux and what constituted ultimate reality--earth, fire, air, or water.

What separates Socrates from the "pre-socratic" philosophers is his concern not only with what ultimately constitutes reality but with moral and political issues. While Parmenides and Heraclitus focused their inquiries on questions that might today seem more proper for scientists, Socrates' quest centered around the question "How ought we to live our lives?" He wanted to know what it meant to be courageous, to be virtuous, to be pious, to be a friend, to be just, to be a lover, to be a philosopher, and to be a good leader. To this end, he inquired into the meaning of courage, virtue, piety, friendship, justice, love, philosophy, and leadership. In his quest for answers to these questions, he managed to make many people who considered themselves experts in these fields angry. At the age of 70, he was accused of corrupting the youth and believing in false gods. For these charges, he was brought to trial.

The "Apology" and the "Crito" are dialogues that center around Socrates' trial and his subsequent imprisonment. In the "Apology," Socrates explains his life as a seeker of truth and tries to show that his example does not corrupt the youth. He also contends he is a deeply religious person. He is, nonetheless, convicted by the jury and sentenced to death. The "Crito" recounts a discussion between Socrates and his close friend Crito as to whether Socrates should escape from prison or accept the penalty of death prescribed by the jury.

The importance of the Platonic dialogues for our culture can hardly be overestimated. Alfred North Whitehead, the eminent 20th century American philosopher, claimed that "All philosophy is but a series of footnotes to Plato." Apart from the high level of intellectual achievement present in Plato's dialogues, one finds in the portrait of Socrates a person committed to living his reasoned beliefs to their logical consequence. Abstract thought and human life are joined superbly in the person of Socrates.

APOLOGY *

Plato

How you have felt, O men of Athens, at hearing the speeches of my accusers, I cannot tell; but I know that their persuasive words almost made me forget who I was:--such was the effect of them; and yet they have hardly spoken a word of truth. But many as their falsehoods were, there was one of them which quite amazed me:--I mean when they told you to be upon your guard, and not let yourselves be deceived by the force of my eloquence. They ought to have been ashamed of saying this, because they were sure to be detected as soon as I opened my lips and displayed my deficiency: they certainly did appear to be most shameless in saying this, unless by the force of eloquence they mean the force of truth; for then I do indeed admit that I am eloquent. But in how different a way from theirs! Well, as I was saying, they have hardly uttered a word, or not more than a word, of truth; but you shall hear from me the whole truth: not, however, delivered after their manner, in a set oration duly ornamented with words and phrases. No, indeed! but I shall use the words and arguments which occur to me at the moment; for I am certain that this is right, and that at my time of life I ought not to be appearing before you, O men of Athens, in the character of a juvenile orator--let no one expect this of me. And I must beg of you to grant me one favor, which is this--If you hear me using the same words in my defence which I have been in the habit of using, and which most of you may have heard in the agora, and at the tables of the money-changers, or anywhere else, I would ask you not to be surprised at this, and not to interrupt me. For I am more than seventy years of age, and this is the first time that I have ever appeared in a court of law, and I am quite a stranger to the ways of the place; and therefore I would have you regard me as if I were really a stranger, whom you would excuse if he spoke in his

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* From The Works of Plato, tr. B. Jowett. (New York: The Dial Press).

native tongue, and after the fashion of his country;--that I think is not an unfair request. Never mind the manner, which may or may not be good; but think only of the justice of my cause, and give heed to that: let the judge decide justly and the speaker speak truly.

And first, I have to reply to the older charges and to my first accusers, and then I will go on to the later ones. For I have had many accusers, who accused me of old, and their false charges have continued during many years; and I am more afraid of them than of Anytus and his associates, who are dangerous, too, in their own way. But far more dangerous are these, who began when you were children, and took possession of your minds with their falsehoods, telling of one Socrates, a wise man, who speculated about the heaven above, and searched into the earth beneath, and made the worse appear the better cause. These are the accusers whom I dread; for they are the circulators of this rumor, and their hearers are too apt to fancy that speculators of this sort do not believe in the gods. And they are many, and their charges against me are of ancient date, and they made them in days when you were impressible--in childhood, or perhaps in youth--and the cause when heard went by default, for there was none to answer. And hardest of all, their names I do not know and can not tell; unless in the chance case of a comic poet. But the main body of these slanderers who from envy and malice have wrought upon you--and there are some of them who are convinced themselves, and impart their convictions to others--all these, I say, are most difficult to deal with; for I can not have them up here, and examine them, and therefore I must simply fight with shadows in my own defence, and examine when there is no one who answers. I will ask you then to assume with me, as I was saying, that my opponents are of two kinds; one recent, the other ancient: and I hope that you will see the propriety of my answering the latter first, for these accusations you heard long before the others, and much oftener.

Well, then, I will make my defence, and I will endeavor in the short time which is allowed to do away with this evil opinion of me which you have held for such a long time; and I hope that I may succeed if this be well for you and me, and that my words may find favor with you. But I know that to accomplish this is not easy--I quite can see the nature of the task. Let the event be as God wills: in obedience to the law I make my defence.

I will begin at the beginning, and ask what the accusation is which has given rise to this slander of me, and which has encouraged Meletus to proceed against me. What do the slanderers say? They shall be my prosecutors, and I will sum up their words in an affidavit. "Socrates is an evil-doer, and a curious person, who searches into things under the earth and in heaven, and he makes the worse appear the better cause; and he teaches the aforesaid doctrines to others." That is the nature of the accusation, and that is what you have seen yourselves in the comedy of Aristophanes, who has introduced a man whom he calls Socrates, going about and saying that he can walk in the air, and talking a deal of nonsense concerning matters of which I do not pretend to know either much or little--not that I mean to say anything disparaging of any one who is a student of natural philosophy. I should be very sorry if Meletus could lay that to my charge. But the simple truth is, O Athenians, that I have nothing to do with these studies. Very many of those here present are witnesses to the truth of this, and to them I appeal. Speak then, you who have heard me, and tell your neighbors whether any of you have ever known me hold forth in few words or in many upon matters of this sort.... You hear their answer. And from what they say of this you will be able to judge of the truth of the rest.

As little foundation is there for the report that I am a teacher, and take money; that is no more true than the other. Although, if a man is able to teach, I honor him for being paid. There is Gorgias of Leontium, and Prodicus of Ceos, and Hippias of Elis, who go the round of the cities, and are able to persuade the young men to leave their own citizens, by whom they might be taught for nothing, and come to them, whom they not only pay, but are thankful if they may be allowed to pay them. There is actually a Parian philosopher residing in Athens, of whom I have heard; and I came to hear of him in this way:- I met a man who has spent a world of money on the sophists, Callias, the son of Hipponicus, and knowing that he had sons, I asked him: "Callias," I said, "if your two sons were foals or calves, there would be no difficulty in finding some one to put over them; we should hire a trainer of horses, or a farmer probably, who would improve and perfect them in their own proper virtue and excellence; but as they are human beings, whom are you thinking of placing over them? Is there any one who understands human and political virtue? You must have thought about this as you have sons; is there any one?" "There is," he said. "Who is he?" said I; "and of what country? and what does he charge?" "Evenus the Parian," he replied: "he is the man, and his charge is five minae." Happy is Evenus, I said to myself, if he really has this wisdom, and teaches at such a modest charge. Had I the same, I should have been very proud and conceited; but the truth is that I have no knowledge of this kind, O Athenians.

I dare say that some one will ask the question, "Why is this, Socrates, and what is the origin of these accusations of you: for there must have been something strange which you have been doing? All this great fame and talk about you would never have arisen if you had been like other men: tell us, then, why this is, as we should be sorry to judge hastily of you." Now I regard this as a fair challenge, and I will endeavor to explain to you the origin of this name of "wise," and of this evil fame. Please to attend then. And although some of you may think that I am joking, I declare that I will tell you the entire truth. Men of Athens, this reputation of mine has come of a certain sort of wisdom which I possess. If you ask me what kind of wisdom, I reply, such wisdom is attainable by man, for to that extent I am inclined to believe that I am wise; whereas the persons of whom I was speaking have a superhuman wisdom, which I may fail to describe, because I have it not myself; and he who says that I have, speaks falsely, and is taking away my character. And here, O men of Athens, I must beg you not to interrupt me, even if I seem to say something extravagant. For the word which I will speak is not mine. I will refer you to a wisdom who is worthy of credit, and will tell you about my wisdom- whether I have any, and of what sort- and that witness shall be the God of Delphi. You must have known Chaerephon; he was early a friend of mine, and also a friend of yours, for he shared in the exile of the people, and returned with you. Well, Chaerephon, as you know, was very impetuous in all his doings, and he went to Delphi and boldly asked the oracle to tell him whether-as I was saying, I must beg you not to interrupt- he asked the oracle to tell him whether there was any one wiser than I was, and the Pythian prophetess answered, that there was no man wiser. Chaerephon is dead himself; but his brother, who is in court, will confirm the truth of this story.

Why do I mention this? Because I am going to explain to you why I have such an evil name. When I heard the answer, I said to myself, What can the god mean? and what is the interpretation of this riddle? for I know that I have no wisdom, small or great. What then can he mean when he says that I am the wisest of men? And yet he is a god, and can not lie; that would be against his nature. After long consideration, I at last thought of a method of trying the question. I reflected that if I could only find a man wiser than myself, then I might go to the god with a refutation in my hand. I should say to him, "Here is a man who is wiser than I am; but you said that I was the wisest." Accordingly I went to one who had the reputation of wisdom, and observed him-his name I need not mention; he was a politician whom I selected for examination-and the result was as follows: When I began to talk with him, I could not help thinking that he was not really wise, although he was thought wise by many, and wiser still by himself; and I went and tried to explain to him that he thought himself wise, but was not really wise; and the consequence was that he hated me, and his enmity was shared by several who were present and heard me. So I left him, saying to myself, as I went away: Well, although I do not suppose that either of us knows anything really beautiful and good, I am better off than he is, -for he knows nothing, and thinks that he knows. I neither know nor think that I know. In this latter particular, then, I seem to have slightly the advantage of him. Then I went to another who had still higher philosophical pretensions, and my conclusion was exactly the same. I made another enemy of him, and of many others besides him.

After this I went to one man after another, being not unconscious of the enmity which I provoked, and I lamented and feared this: but necessity was laid upon me,-the word of God, I thought, ought to be considered first. And I said to myself, Go I must to all who appear to know, and find out the meaning of the oracle. And I swear to you, Athenians, by the dog I swear? -for I must tell you the truth- the result of my mission was just this: I found that the men most in repute were all but the most foolish; and that some inferior men were really wiser and better. I will tell you the tale of my wanderings and of the "Herculean" labors, as I may call them, which I endured only to find at last the oracle irrefutable. When I left the politicians, I went to the poets; tragic, dithyrambic, and all sorts. And there, I said to myself, you will be detected; now you will find out that you are more ignorant than they are. Accordingly, I took them some of the most elaborate passages in their own writings, and asked what was the meaning of them-thinking that they would teach me something. Will you believe me? I am almost ashamed to speak of this, but still I must say that there is hardly a person present who would not have talked better about their poetry than they did themselves. That showed me in an instant that not by wisdom do poets write poetry, but by a sort of genius and inspiration; they are like diviners or soothsayers who also say many fine things, but do not understand the meaning of them. And the poets appeared to me to be much in the same case; and I further observed that upon the strength of their poetry they believed themselves to be the wisest of men in other things in which they were not wise. So I departed, conceiving myself to be superior to them for the same reason that I was superior to the politicians.

At last I went to the artisans, for I was conscious that I knew nothing at all, as I may say, and I was sure that they knew many fine things; and in this I was not mistaken, for they did know many things of which I was ignorant, and in this they certainly were wiser than I was. But I observed that even the good artisans fell into the same error as the poets;- because they were good workmen they thought that they also knew all sorts of high matters, and this defect in them overshadowed their wisdom-therefore I asked myself on behalf of the oracle, whether I would like to be as I was, neither having their knowledge nor their ignorance, or like them in both; and I made answer to myself and the oracle that I was better off as I was.

This investigation has led to my having many enemies of the worst and most dangerous kind, and has given occasion also to many calumnies. And I am called wise, for my hearers always imagine that I myself possess the wisdom which I find wanting in others: but the truth is, O men of Athens, that God only is wise; and in this oracle he means to say that the wisdom of men is little or nothing: he is not speaking of Socrates, he is only using my name as an illustration, as if he said, He, O men, is the wisest who, like Socrates, knows that his wisdom is in truth worth nothing. And so I go my way, obedient to the god, and make inquisition into the wisdom of any one, whether citizen or stranger, who appears to be wise; and if he is not wise, then in vindication of the oracle I show him that he is not wise; and this occupation quite absorbs me, and I have no time to give either to any public matter of interest or to any concern of my own, but I am in utter poverty by reason of my devotion to the god.

There is another thing:-young men of the richer classes, who have not much to do, come about me of their own accord; they like to hear the pretenders examined, and they often imitate me, and examine others themselves; there are plenty of persons, as they soon enough discover, who think that they know something, but really know little or nothing; and then those who are examined by them instead of being angry with themselves are angry with me: This confounded Socrates, they say; this villainous misleader of youth!--and then if somebody asks them, Why, what evil does he practice or teach? they do not know, and can not tell; but in order that they may not appear to be at a loss, they repeat the ready-made charges which are used against all philosophers about teaching things up in the clouds and under the earth, and having no gods, and making the worse appear the better cause; for they do not like to confess that their pretence of knowledge has been detected--which is the truth; and as they are numerous and ambitious and energetic, and are all in battle array and have persuasive tongues, they have filled your ears with their loud and inveterate calumnies. And this is the reason why my three accusers, Meletus and Anytus and Lycon, have set upon me; Meletus, who has a quarrel with me on behalf of the poets; Anytus, on behalf of the craftsmen; Lycon, on behalf of the rhetoricians: and as I said at the beginning, I can not expect to get rid of this mass of calumny all in a moment. And this, O men of Athens, is the truth and the whole truth; I have concealed nothing, I have dissembled nothing. And yet, I know that this plainness of speech makes them hate me, and what is their hatred but a proof that I am speaking the truth?--this is the occasion and reason of their slander of me, as you will find out either in this or in any future inquiry.

I have said enough in my defence against the first class of my accusers; I turn to the second class who are headed by Meletus, that good and patriotic man, as he calls himself. And now I will try to defend myself against them: these new accusers must also have their affidavit read. What do they say? Something of this sort:--That Socrates is a doer of evil, and corruptor of the youth, and he does not believe in the gods of the state, and has other new divinities of his own. That is the sort of charge; and now let us examine the particular counts. He says that I am a doer of evil, who corrupt the youth; but I say, O men of Athens, that Meletus is a doer of evil, and the evil is that he makes a joke of a serious matter, and is too ready at bringing other men to trial from a pretended zeal and interest about matters in which he really never had the smallest interest. And the truth of this I will endeavor to prove.

Come hither, Meletus, and let me ask a question of you. You think a great deal about the improvement of youth?

Yes I do.

Tell the judges, then, who is their improver; for you must know, as you have taken the pains to discover their corruptor, and are citing and accusing me before them. Speak, then, and tell the judges who their improver is. Observe, Meletus, that you are silent, and have nothing to say. But is not this rather disgraceful, and very considerable proof of what I was saying, that you have no interest in the matter? Speak up, friend, and tell us who their improver is.

The laws.

But that, my good sir, is not my meaning. I want to know who the person is, who, in the first place, knows the laws.

The judges, Socrates, who are present in court.

What, do you mean to say, Meletus, that they are able to instruct and improve youth?

Certainly they are.

What, all of them, or some only and not others?

All of them.

By the goddess Here, that is good news! There are plenty of improvers, then. And what do you say of the audience, do they improve them?

Yes, they do.

And the senators?

Yes, the senators improve them.

But perhaps the ecclesiasts corrupt them? -- or do they too improve them?

They improve them.

Then every Athenian improves and elevates them; all with the exception of myself; and I alone am their corruptor? Is that what you affirm?

That is what I stoutly affirm.

I am very unfortunate if that is true. But suppose I ask you a question: Would you say that this also holds true in the case of horses? Does one man do them harm and all the world good? Is not the exact opposite of this true? One man is able to do them good, or at least not many;--the trainer of horses, that is to say, does them good, and others who have to do with them rather injure them? Is not that true, Meletus, of horses, or any other animals? Yes, certainly. Whether you and Anytus say yes or no, that is no matter. Happy indeed would be the condition of youth if they had one corruptor only, and all the rest of the world were their improvers. And you, Meletus, have sufficiently shown that you never had a thought about the young: your carelessness is seen in your not caring about the matters spoken of in this very indictment.

And now, Meletus, I must ask you another question: Which is better, to live among bad citizens, or among good ones? Answer, friend, I say; for that is a question which may be easily answered. Do not the good do their neighbors good, and the bad do them evil?

Certainly.

And is there any one who would rather be injured than benefitted by those who live with him? Answer, my good friend, the law requires you to answer--does any one like to be injured?

Certainly not.

And when you accuse me of corrupting and deteriorating the youth, do you allege that I corrupt them intentionally or unintentionally?

Intentionally, I say.

But you have just admitted that the good do their neighbors good, and the evil do them evil. Now, is that a truth which your superior wisdom has recognized thus early in life, and am I, at my age, in such darkness and ignorance as not to know that if a man with whom I have to live is corrupted by me, I am very likely to be harmed by him, and yet I corrupt him, and intentionally, too;--that is what you are saying and of that you will never persuade me or any other human being. But either I do not corrupt them, or I corrupt them unintentionally, so that on either view of the case you lie. If my offence is unintentional, the law has no cognizance of unintentional offenses: you ought to have taken me privately, and warned and admonished me; for if I had been better advised, I should have left off doing what I only did unintentionally--no doubt I should; whereas you hated to converse with me or teach me, but you indicted me in this court, which is a place not of instruction, but of punishment.

I have shown, Athenians, as I was saying, that Meletus has no care at all, great or small, about the matter. But still I should like to know, Meletus, in what I am affirmed to corrupt the young. I suppose you mean, as I infer from your indictment, that I teach them not to acknowledge the gods which the state acknowledges, but some other new divinities or spiritual agencies in their stead. These are the lessons which corrupt the youth, as you say.

Yes, that I say emphatically.

Then, by the gods, Meletus, of whom we are speaking, tell me and the court, in somewhat plainer terms, what you mean! for I do not as yet understand whether you affirm that I teach others to acknowledge some gods, and therefore do believe in gods, and am not an entire atheist--this you do not lay to my charge;--but only that they are not the same gods which the city recognizes--the charge is that they are different gods. Or, do you mean to say that I am an atheist simply, and teacher of atheism?

I mean the latter--that you are a complete atheist.

That is an extraordinary statement, Meletus. Why do you say that? Do you mean that I do not believe in the godhead of the sun or moon, which is the common creed of all men?

I assure you, judges, that he does not believe in them; for he says that the sun is stone, and the moon earth.

Friend Meletus, you think that you are accusing Anaxagoras: and you have but a bad opinion of the judges, if you fancy them ignorant to such a degree as not to know that these doctrines are found in the books of Anaxagoras the Clazomenian, who is full of them. And these are the doctrines which the youth are said to learn of Socrates, when there are not unfrequently exhibitions of them at the theatre (price of admission one drachma at the most); and they might cheaply purchase them, and laugh at Socrates if he pretends to father such eccentricities. And so, Meletus, you really think that I do not believe in any god?

I swear by Zeus that you believe absolutely in none at all.

You are a liar, Meletus, not believed even by yourself. For I can not help thinking, O men of Athens, that Meletus is reckless and impudent, and that he has written this indictment in a spirit of mere wantonness and youthful bravado. Has he not compounded a riddle, thinking to try me? He said to himself:--I shall see whether this wise Socrates will discover my ingenious contradiction, or whether I shall be able to deceive him and the rest of them. For he certainly does appear to me to contradict himself in the indictment as much as if he said that Socrates is guilty of not believing in the gods, and yet of believing in them--but this surely is a piece of fun.

I should like you, O men of Athens, to join me in examining in what I conceive to be his inconsistency; and do you, Meletus, answer. And I must remind you that you are not to interrupt me if I speak in my accustomed manner.

Did ever man, Meletus, believe in the existence of human things, and not human beings? . . . I wish, men of Athens, that he would answer, and not be always trying to get up an interruption. Did ever any man believe in horsemanship, and not in horses? or in flute-playing, and not in flute-players? No, my friend; I will answer to you and to the court, as you refuse to answer for yourself. There is no man who ever did. But now please to answer the next question: Can a man believe in spiritual and divine agencies, and not in spirits or demigods?

He can not.

I am glad that I have extracted that answer, by the assistance of the court; nevertheless you swear in the indictment that I teach and believe in divine or spiritual agencies (new or old, no matter for that); at any rate, I believe in spiritual agencies, as you say and swear in the affidavit; but if I believe in divine beings, I must believe in spirits or demigods;--is not that true? Yes, that is true, for I may assume that your silence gives assent to that. Now what are spirits or demigods? are they not either gods or the sons of gods? Is that true?

Yes, that is true.

But this is just the ingenious riddle of which I was speaking: the demigods or spirits are gods, and you say first that I don't believe in gods, and then again that I do believe in gods; that is, if I believe in demigods. For if the demigods are the illegitimate sons of gods, whether by the nymphs or by any other mothers, as is thought, that, as all men will allow, necessarily implies the existence of their parents. You might as well affirm the existence of mules, and deny that of horses and asses. Such nonsense, Meletus, could only have been intended by you as a trial of me. You have put this into the indictment because you had nothing real of which to accuse me. But no one who has a particle of understanding will ever be convinced by you that the same men can believe in divine and superhuman things, and yet not believe that there are gods and demigods and heroes.

I have said enough in answer to the charge of Meletus: any elaborate defence is unnecessary; but as I was saying before, I certainly have many enemies, and this is what will be my destruction if I am destroyed; of that I am certain;--not Meletus, nor yet Anytus, but the envy and destruction of the world. Which has been the death of many good men, and will probably be the death of many more; there is no danger of my being the last of them.

Some one will say: And are you not ashamed, Socrates, of a course of life which is likely to bring you to an untimely end? To him I may fairly answer: There you are mistaken: a man who is good for anything ought not to calculate the chance of living or dying; he ought only to consider whether in doing anything he is doing right or wrong--acting the part of a good man or of a bad. Whereas, according to your view, the heroes who fell at Troy were not good for much, and the son of Thetis above all, who altogether despised danger in comparison with disgrace; and when his goddess mother said to him, in his eagerness to slay Hector, that if he avenged his companion Patroclus, and slew Hector, he would die himself--"Fate," as she said, "waits upon you next after Hector;" he, hearing this, utterly despised danger and death, and instead of fearing them, feared rather to live in dishonor, and not to avenge his friend. "Let me die next," he replies, "and be avenged of my enemy, rather than abide here by the beaked ships, a scorn and a burden of the earth." Had Achilles any thought of death and danger? For wherever a man's place is, whether the place which he has chosen or that in which he has been placed by a commander, there he ought to remain in the hour of danger; he should not think of death or of anything, but of disgrace. And this, O men of athens, is a true saying.

Strange, indeed, would be my conduct, O men of Athens, if I who, when I was ordered by the generals whom you chose to command me at Potidaea and Amphipolis and Delium, remained where they placed me, like any other man, facing death; if, I say, now, when, as I conceive and imagine, God orders me to fulfill the philosopher's mission of searching into my self and other men, I were to desert my post through fear of death, or any other fear; that would indeed be strange, and I might justly be arraigned in court for denying the existence of the gods, if I disobeyed the oracle because I was afraid of death: then I should be fancying that I was wise when I was not wise. For this fear of death is indeed the pretence of wisdom, and not real wisdom, being the appearance of knowing the unknown; since no one knows whether death, which they in their fear apprehend to be the greatest evil, may not be the greatest good. Is there not here conceit of knowledge, which is a disgraceful sort of ignorance? And this is the point in which, as I think, I am superior to men in general, and in which I might perhaps fancy myself wiser than other men,--that whereas I know but little of the world below, I do not suppose that I know: but I do know that injustice and disobedience to a better whether God or man, is evil and dishonorable, and I will never fear or avoid a possible good rather than a certain evil. And therefore if you let me go now, and reject the counsels of Anytus, who said that if I were not put to death I ought not to have been prosecuted, and that if I escape now, your sons will all be utterly ruined by listening to my words--if you say to me, Socrates, this time we will not mind Anytus, and will let you off, but upon one condition, that you are not to inquire and speculate in this way any more, and that if you are caught doing this again you shall die;--if this was the condition on which you let me go, I should reply: Men of athens, I honor and love you; but I shall obey God rather than you, and while I have life and strength I shall never cease from the practice and teaching of philosophy, exhorting any one whom I meet after my manner, and convincing him, saying: O my friend, why do you, who are a citizen of the great and mighty and wise city of Athens, care so much about laying up the greatest amount of money and honor and reputation, and so little about wisdom and truth and the greatest improvement of the soul, which you never regard or heed at all? Are you not ashamed of this? and if the person with whom I am arguing, says: Yes, but I do care; I do not depart or let him go at once; I interrogate and examine and cross-examine him, and if I think that he has no virtue, but only says that he has, I reproach him with undervaluing the greater, and overvaluing the less. And this I should say to every one whom I meet, young and old, citizen and alien, but especially to the citizens, inasmuch as they are my brethren. For this is the command to God, as I would have you know; and I believe that to this day no greater good has ever happened in the state than my service to the God. For I do nothing but go about persuading you all, old and young alike, not to take thought for your persons or your properties, but first and chiefly to care about the greatest improvement of the soul. I tell you that virtue is not given by money, but that from virtue come money and every other good of man, public as well as private. This is my teaching, and if this is the doctrine which corrupts the youth, my influence is ruinous indeed. But if any one says that this is not my teaching, he is speaking an untruth. Wherefore, O men of Athens, I say to you, do as Anytus bids or not as Anytus bids, and either acquit me or not; but whatever you do, know that I shall never alter my ways, not even if I have to die many times.

Men of Athens, do not interrupt, but hear me; there was an agreement between us that you should hear me out. And I think that what I am going to say will do you good: for I have something more to say, at which you may be inclined to cry out; but I beg that you will not do this. I would have you know, that if you kill such an one as I am, you will injure yourselves more than you will injure me. Meletus and Anytus will not injure me: they can not; for it is not in the nature of things that a bad man should injure a better than himself. I do not deny that he may, perhaps, kill him, or drive him into exile, or deprive him of civil rights; and he may imagine, and others may imagine, that he is doing him a great injury: but in that I do not agree with him; for the evil of doing as Anytus is doing--of unjustly taking away another man's life--is greater far. And now, Athenians, I am not going to argue for my own sake, as you may think, but for yours, that you may not sin against the God, or lightly reject his boon by condemning me. For if you kill me you will not easily find another like me, who, if I may use such a ludicrous figure of speech, am a sort of gadfly, given to the state by the God; and the state is like a great and noble steed who is tardy in his motions owing to his very size, and requires to be stirred into life. I am that gadfly which God has given the state, and all day long and in all places am always fastening upon you, arousing and persuading and reproaching you. And as you will not easily find another like me, I would advise you to spare me. I dare say that you may feel irritated at being suddenly awakened when you are caught napping; and you may think that if you were to strike me dead as Anytus advises, which you easily might, then you would sleep on for the remainder of your lives, unless God in his care of you gives you another gadfly. And that I am given to you by God is proved by this:--that if I had been like other men, I should not have neglected all my own concerns or patiently seen the neglect of them during all these years, and have been doing yours, coming to you individually like a father or elder brother, exhorting you to regard virtue; this, I say, would not be like human nature. And had I gained anything, or if my exhortations had been paid, there would have been some sense in that; but now, as you will perceive, not even the impudence of my accusers dares to say that I have ever exacted or sought pay of any one; they have no witness of that. And I have a witness of the truth of what I say; my poverty is a sufficient witness.

Some one may wonder why I go about in private giving advice and busying myself with the concerns of others, but do not venture to come forward in public and advise the state. I will tell you the reason of this. You have often heard me speak of an oracle or sign which comes to me, and is the divinity which Meletus ridicules in the indictment. This sign I have had ever since I was a child. The sign is a voice which comes to me and always forbids me to do something which I am going to do, but never commands me to do anything, and this is what stands in the way of my being a politician. And rightly, as I think. For I am certain, O men of Athens, that if I had engaged in politics, I should have perished long ago, and done no good either to you or to myself. And don't be offended at my telling you the truth: for the truth is, that no man who goes to war with you or any other multitude, honestly struggling against the commission of unrighteousness and wrong in the state, will save his life; he who will really fight for the right, if he would live even for a little while, must have a private station and not a public one.

I can give you as proofs of this, not words only, but deeds, which you value more than words. Let me tell you a passage of my own life which will prove to you that I should never have yielded to injustice from any fear of death, and that if I had not yielded I should have died at once. I will tell you a story--tasteless perhaps and commonplace, but nevertheless true. The only office of state which I ever held, O men of Athens, was that of senator: the tribe Antiochis, which is my tribe, had the presidency at the trial of the generals who had not taken up the bodies of the slain after the battle of Arginusae; and you proposed to try them all together, which was illegal, as you all thought afterwards; but at the time I was the only one of the Prytanes who was opposed to the illegality, and I gave my vote against you; and when the orators threatened to impeach and arrest me, and have me taken away, and you called and shouted, I made up my mind that I would run the risk, having law and justice with me, rather than take part in your injustice because I feared imprisonment and death. This happened in the days of the democracy. But when the oligarchy of the Thirty was in power, they sent for me and four others into the rotunda, and bade us bring Leon the Salaminian from Salamis, as they wanted to execute him. This was a specimen of the sort of commands which they were always giving with the view of implicating as many as possible in their crimes; and then I showed, not in word only but in deed, that, if I may be allowed to use such an expression, I cared not a straw for death, and that my only fear was the fear of doing an unrighteous or unholy thing. For the strong arm of that oppressive power did not frighten me into doing wrong; and when we came out of the rotunda the other four went to Salamis and fetched Leon, but I went quietly home. For which I might have lost my life, had not the power of the Thirty shortly afterwards come to an end. And to this many will witness.

Now do you really imagine that I could have survived all these years, if I had led a public life, supposing that like a good man I had always supported the right and had made justice, as I ought, the first thing? No indeed, men of Athens, neither I nor any other. But I have been always the same in all my actions, public as well as private, and never have I yielded any base compliance to those who are slanderously termed my disciples, or to any other. For the truth is that I have no regular disciples: but if any one likes to come and hear me while I am pursuing my mission, whether he be young or old, he may freely come. Nor do I converse with those who pay only, and not with those who do not pay; but any one, whether he be rich or poor, may ask and answer me and listen to my words; and whether he turns out to be a bad man or a good one, that can not be justly laid to my charge, as I never taught him anything. And if any one says that he has ever learned or heard anything from me in private which all the world has not heard, I should like you to know that he is speaking an untruth.

But I shall be asked, Why do people delight in continually conversing with you? I have told you already, Athenians, the whole truth about this: they like to hear the cross-examination of the pretenders to wisdom; there is amusement in this. And this is a duty which the will of divine power was ever signified to any one. This is true, O

Athenians; or, if not true, would be soon refuted. For if I am really corrupting the youth, and have corrupted some of them already, those of them who have grown up and have become sensible that I gave them bad advice in the days of their youth should come forward as accusers and take their revenge; and if they do not like to come themselves, some of their relatives, fathers, brothers, or other kinsmen, should say what evil their families suffered at my hands. Now is their time. Many of them I see in the court. There is Crito, who is of the same age and of the same deme with myself, and there is Critobulus his son, whom I also see. Then again there is Lysanias of Sphettus, who is the father of Aeschines--he is present; and also there is Antiphon of Cephisus, who is the father of Epigenes; and there are the brothers of several who have associated with me. There is Nicostratus the son of Theosdotides, and the brother of Theodotus (now Theodotus himself is dead, and therefore he, at any rate, will not seek to stop him); and there is Paralus the son of Demodocus, who had a brother Theages; and Adeimantus the son of Ariston, whose brother Plato is present; and Aeantodorus, who is the brother of Apollodorus, whom I also see. I might mention a great many others, any of whom Meletus should have produced as witnesses in the course of his speech; and let him still produce them, if he has forgotten--I will make way for him. And let him say, if he has any testimony of the sort which he can produce. Nay, Athenians, the very opposite is the truth. For all these are ready to witness on behalf of the corruptor, of the destroyer of their kindred, as Meletus and Anytus call me; not the corrupted youth only--there might have been a motive for that--but their uncorrupted elder relatives. Why should they too support me with their testimony? Why, indeed, except for the sake of truth and justice, and because they know that I am speaking the truth, and that Meletus is lying.

Well, Athenians, this and the like of this is nearly all the defence which I have to offer. Yet a word more. Perhaps there may be some one who is offended at me, when he calls to mind how he himself on a similar, or even a less serious occasion, had recourse to prayers and supplications with many tears, and how he produced his children in court, which was a moving spectacle, together with a posse of his relations and friends; whereas I, who am probably in danger of my life, will do none of these things. Perhaps this may come into his mind, and he may be set against me, and vote in anger because he is displeased at this. Now if there be such a person among you, which I am far from affirming, I may fairly reply to him: My friend, I am a man, and like other men, a creature of flesh and blood, and not of wood or stone, as Homer says; and I have a family, yes, and sons, O Athenians, three in number, one of whom is growing up, and the two others are still young; and yet I will not bring any of them hither in order to petition you for an acquittal. And why not? Not from any self-will or disregard of you. Whether I am or am not afraid of death is another question, of which I will not now speak. But my reason simply is, that I feel such conduct to be discreditable to myself, and you, and the whole state. One who has reached my years, and who has a name for wisdom, whether deserved or not, ought not to demean himself. At any rate, the world has decided that Socrates is in some way superior to other men. And if those among you who are said to be superior in wisdom and courage, and any other virtue, demean themselves in this way, how shameful is their conduct! I have seen men of reputation, when they have been condemned, behaving in the strangest manner: they seemed to fancy that they were going to suffer something dreadful if they died, and that they could be immortal if you only allowed them to live; and I think that they were a dishonor to the state, and that any stranger coming in would say of them that the most eminent men of Athens, to whom the Athenians themselves give honor and command, are no better than women. And I say that these things ought not to be done by those of us who are of reputation; and if they are done, you ought not to permit them; you ought rather to show that you are more inclined to condemn, not the man who is quiet, but the man who gets up a doleful scene, and makes the city ridiculous.

But, setting aside the question of dishonor, there seems to be something wrong in petitioning a judge, and thus procuring an acquittal instead of informing and convincing him. For his duty is, not to make a present of justice, but to give judgment; and he has sworn that he will judge according to the laws and not according to his own good pleasure; and neither he nor we should get into the habit of perjuring ourselves--there can be no piety in that. Do not then require me to do what I consider dishonorable and impious and wrong, especially now, when I am being tried for impiety on the indictment of Meletus. For if, O men of Athens, by force of persuasion and entreaty, I could overpower your oaths, then I should be teaching you to believe that there are no gods, and convict myself, in my own defence, of not believing in them. But that is not the case; for I do believe that there are gods, and in a far higher sense than that in which any of my accusers believe in them. And to you and to God I commit my cause, to be determined by you as is best for you and me.

There are many reasons why I am not grieved, O men of Athens, at the vote of condemnation. I expected this, and am only surprised that the votes are so nearly equal; for I had thought that the majority against me would have been far larger; but now, had thirty votes gone over to the other side, I should have been acquitted. And I may say that I have escaped Meletus. And I may say more; for without the assistance of Anytus and Lycon, he would not have had a fifth part of the votes, as the law requires, in which case he would have incurred a fine of a thousand drachmae, as is evident.

And so he proposes death as the penalty. And what shall I propose on my part, O men of Athens? Clearly that which is my due. And what is that which I ought to pay or to receive? What shall be done to the man who has never had the wit to be idle during his whole life; but has been careless of what the many care about--wealth, and family interests, and military offices, and speaking in the assembly, and magistracies, and plots, and parties. Reflecting that I was really too honest a man to follow in this way and live, I did not go where I could do no good to you or to myself; but where I could do the greatest good privately to every one of you, thither I went, and sought to persuade every man among you, that he must look to himself, and seek virtue and wisdom before he looks to his private interests, and look to the state before he looks to the interests of the state; and that this should be the order which he observes in all his actions. What shall be done to such an one? Doubtless some good thing, O men of Athens, if he has his reward; and the good should be of a kind suitable to him. What would be a reward suitable to a poor man who is your benefactor, who desires leisure that he may instruct you? There can be no more fitting reward than maintenance in the Prytaneum, O men of Athens, a reward which he deserves far more than the citizen who has won the prize at Olympia in the horse or chariot race, whether the chariots were drawn by two horses or by many. For I am in want, and he has enough; and he only gives you the appearance of happiness, and I give you the reality. And if I am to estimate the penalty justly, I say that maintenance in the Prytaneum is the just return.

Perhaps you may think that I am braving you in saying this, as in what I said before about the tears and prayers. But that is not the case. I speak rather because I am convinced that I never intentionally wronged any one, although I can not convince you of that--for we have had a short conversation only; but if there were a law at Athens, such as there is in other cities, that a capital cause should not be decided in one day, then I believe that I should have convinced you; but now the time is too short. I can not in a moment refute great slanders; and, as I am convinced that I never wronged another, I will assuredly not wrong myself. I will not say of myself that I deserve any evil, or propose any penalty. Why should I? Because I am afraid of the penalty of death which Meletus proposes? When I do not know whether death is a good or an evil, why should I propose a penalty which would certainly be an evil? Shall I say imprisonment? And why should I live in prison, and be the slave of the magistrates of the year--of the eleven? Or shall the penalty be a fine, and imprisonment until the fine is paid? There is the same objection. I should have to lie in prison, for money I have none, and can not pay. And if I say exile (and this may possibly be the penalty which you will affix), I must indeed be blinded by the love of life, if I do not consider that when you, who are my own citizens, can not endure my discourses and words, and have found them so grievous and odious that you would fain have done with them, others are likely to endure me. No indeed, men of Athens, that is not very likely. And what a life should I lead, at my age, wandering from city to city, living in ever-changing exile, and always being driven out! For I am quite sure that into whatever place I go, as here so also there, the young men will come to get me; and if I drive them away, their elders will drive me out at their desire; and if I let them come, their fathers and friends will drive me out for their sakes.

Some one will say: Yes, Socrates, but can not you hold your tongue, and then you may go into a foreign city, and no one will interfere with you? Now I have great difficulty in making you understand my answer to this. For if I tell you that this would be a disobedience to a divine command, and therefore that I can not hold my tongue, you will not believe that I am serious; and if I say again that the greatest good of man is daily to converse about virtue, and all that concerning which you hear me examining myself and others, and that the life which is unexamined is not worth living -- that you are still less likely to believe. And yet what I say is true, although a thing of which it is hard for me to persuade you. Moreover, I am not accustomed to think that I deserve any punishment. Had I money I might have proposed to give you what I had, and have been none the worse. But yo see that I have none, and can only ask you to proportion the fine to my means. However, I think that I could afford a mine, and therefore I propose that penalty: Plato, Crito, Critobulus, and Apollodorus, my friends here, bid me say thirty minae, and they will be the sureties. Well, then, say thirty minae, let that be the penalty; for that they will be ample security to you.

Not much time will be gained, O Athenians, in return for the evil name which you will get from the detractors of the city, who will say that you killed Socrates, a wise man; for they will call me wise even although I am not wise when they want to reproach you. If you had waited a little while, your desire would have been fulfilled in the course of nature. For I am far advanced in years, as you may perceive, and not far from death. I am speaking now only to those of you who have condemned me to death. And I have another thing to say to them: You think that I was convicted through deficiency of words -- I mean, that if I had thought fit to leave nothing undone, nothing unsaid, I might have gained an acquittal. No so; the deficiency which led to my conviction was not of words -- certainly not. But I had not the boldness or impudence or inclination to address you as you would have liked me to address you, weeping and wailing and lamenting, and saying and doing many things which you have been accustomed to hear from others, and which, as I say, are unworthy of me. But I thought that I ought not to do anything common or mean in the hour of danger: nor do I now repent of the manner of my defence, and I would rather die having spoken after my manner, than speak in you manner and live. For neither in war nor yet at law ought any man to use every way of escaping death. For often in battle there is no doubt that if a man will throw away his arms, and fall on his knees before his pursuers, he may escape death; and in other dangers there are other ways of escaping death, if a man is willing to say and do anything. The difficulty, my friends, is not in avoiding death, but in avoiding unrighteousness; for that runs faster than death. I am old and move slowly, and the slower runner has overtaken me, and my accusers are keen and quick, and the faster runner, who is unrighteousness, has overtaken them. And now I depart hence condemned by you to suffer the penalty of death, and they too go their ways condemned by the truth to suffer the penalty of villainy and wrong; and I must abide by my award -- let them abide by theirs. I suppose that these things may be regarded as fated, -- and I think that they are well.

And now, O men who have condemned me, I would fain prophesy to you; for I am about to die, and that is the hour in which men are gifted with prophetic power. And I prophesy to you who are my murderers, that immediately after my death punishment far heavier than you have inflicted on me will surely await you. Me you have killed because you wanted to escape the accuser, and not to give an account of your lives. But that will not be as you suppose: far otherwise. For I say that there will be more accusers of you than there are now; accusers whom hitherto I have restrained: and as they are younger they will be more severe with you, and you will be more offended at them. For if you think that by killing men you can avoid the accuser censuring your lives, you are mistaken; that is not a way of escape which is either possible or honorable; the easiest and the noblest way is not to be crushing others, but to be improving yourselves. This is the prophecy which I utter before my departure to the judges who have condemned me.

Friends, who would have acquitted me, I would like also to talk with you about this thing which has happened, while the magistrates are busy, and before I go to the place at which I must die. Stay then awhile, for we may as well talk with one another while there is time. You are my friends, and I should like to show you the meaning of this event which has happened to me. O my judges -- for you I may truly call judges -- I should like to tell you of a wonderful circumstance. Hitherto the familiar oracle within me has constantly been in the habit of opposing me even about trifles, if I was going to make a slip or error about anything; and now as you see there has come upon me that which may be thought, and is generally believed to be, the last and worst evil. But the oracle made no sign of opposition, either as I was leaving my house and going out in the morning, or when I was going up into this court, or while I was speaking, at anything which I was going to say; and yet I have often been stopped in the middle of a speech. but now in nothing I either said or did touching this matter has the oracle opposed me. What do I take to be the explanation of this? I will tell you. I regard this as a proof that what has happened to me is a good, and that those of us who think that death is an evil are in error. This is a great proof to me of what I am saying, for the customary sign would surely have opposed me had I been going to evil and not to good.

Let us reflect in another way, and we shall see that there is great reason to hope that death is a good, for one of two things: -- either death is a state of nothingness and utter unconsciousness, or, as men say, there is a change and migration of the soul from this world to another. Now if you suppose that there is no consciousness, but a sleep like the sleep of him who is undisturbed even by the sight of dreams, death will be an unspeakable gain. For if a person were to select the night in which his sleep was undisturbed even by dreams, and were to compare with this the other days and nights of his life, and then were to tell us how many days and nights he had passed in the course of his life better and more pleasantly than this one, I think that any man, I will not say a private man, but even the great king will not find many such days or nights, when compared with the others. Now if death is like this, I say that to die is gain; for eternity is then only a single night. But if death is the journey to another place, and there, as men say, all the dead are, what good, O my friends and judges, can be greater than this? If indeed when the pilgrim arrives in the world below, he is delivered from the professors of justice in this world, and finds the true judges who are said to give judgment there, Minos and Rhadamanthus and Aeacus and Triptolemus, and other sons of God who were righteous in their own life, that pilgrimage will be worth making. What would not a man give if he might converse with Orpheus and Musaeus and Hesiod and Homer? Nay, if this be true, let me die again and again. I, too, shall have a wonderful interest in a place where I can converse with Palamedes, and Ajax the son of Telamon, and other heroes of old, who have suffered death through an unjust judgment; and there will be no small pleasure, as I think, in comparing my own sufferings with theirs. Above all, I shall be able to continue my search into true and false knowledge; as in this world, so also in that; I shall find out who is wise, and who pretends to be wise, and is not. What would not a man give, O judges, to be able to examine the leader of the great Trojan expedition: or Odysseus or Sisyphus, or numberless others, men and women too! What infinite delight would there be in conversing with them and asking them questions! For in that world they do not put a man to death for this; certainly not. For besides being happier in that world than in this, they will be immortal, if what is said it true.

Wherefore, O judges, be of good cheer about death, and know this of a truth -- that no evil can happen to a good man, either in life or after death. He and his are not neglected by the gods; not has my own approaching end happened by mere chance. But I see clearly that to die and be released was better for me; and therefore the oracle gave no sign. For which reason, also, I am not angry with my accusers or my condemners; they have done me no harm, although neither of them meant to do me any good; and for this I may gently blame them.

Still I have a favor to ask of them. When my sons are grown up, I would ask you, O my friends, to punish them; and I would have you trouble them, as I have troubled you, if they seem to care about riches, or anything, more than about virtue; or if they pretend to be something when they are really nothing,-- then reprove them, as I have reproved you, for not caring about that for which they ought to care, and thinking that they are something when they are really nothing. And if you do this, I and my sons will have received justice at your hands.

The hour of departure has arrived, and we go our ways -- I to die, and you to live. Which is better God only knows.

CRITO *

Plato

PERSONS OF THE DIALOGUE

Socrates   Crito

SCENE:--The Prison of Socrates.

Socrates. Why have you come at this hour, Crito? It must be quite early?

Crito. Yes, certainly.

Soc. What is the exact time?

Cr. The dawn is breaking.

Soc. I wonder that the keeper of the prison would let you in.

Cr. He knows me, because I often come, Socrates; moreover, I have done him a kindness.

Soc. And are you only just come?

Cr. No, I came some time ago.

Soc. Then why did you sit and say nothing, instead of awakening me at once?

Cr. Why, indeed, Socrates, I myself would rather not have all this sleeplessness and sorrow. But I have been wondering at your peaceful slumbers, and that was the reason why I did not awaken you, because I wanted you to be out of pain. I have always thought you happy in the calmness of your temperament: but never did I see the like of the easy, cheerful way in which you bear this calamity.

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* From The Works of Plato, tr. B. Jowett. (New York: The Dial Press).

Soc. Why, Crito, when a man has reached my age he ought not to be repining at the prospect of death.

Cr. And yet other old men find themselves in similar misfortunes, and age does not prevent them from repining.

Soc. That may be. But you have not told me why you come at this early hour.

Cr. I come to bring you a message which is sad and painful: not, as I believe, to yourself, but to all of us who are your friends, and saddest of all to me.

Soc. What! I suppose that the ship has come from Delos, on the arrival of which I am to die?

Cr. No, the ship has not actually arrived, but she will probably be here to-day, as persons who have come from Sunium tell me that they left her there; and therefore tomorrow, Socrates, will be the last day of your life.

Soc. Very well, Crito; if such is the will of God, I am willing; but my belief is that there will be a delay of a day.

Cr. Why do you say this?

Soc. I will tell you. I am to die on the day after the arrival of the ship?

Cr. Yes; that is what the authorities say.

Soc. But I do not think that the ship will be here until to- morrow; this I gather from a vision which I had last night, or rather only just now, when you fortunately allowed me to sleep.

Cr. And what was the nature of the vision?

Soc. There came to me the likeness of a woman, fair and comely, clothed in white raiment, who called to me and said: O Socrates,

> "The third day hence to Phthia shalt thou go."

Cr. What a singular dream, Socrates!

Soc. There can be no doubt about the meaning, Crito, I think.

Cr. Yes; the meaning is only too clear. But, Oh! my beloved Socrates, let me entreat you once more to take my advice and escape. For if you die I shall not only lose a friend who can never be replaced, but there is another evil: people who do not know you and me will believe that I might have saved you if I had been willing to give money, but that I did not care. Now, can there be a worse disgrace than this--that I should be thought to value money more than the life of a friend? For the many will not be persuaded that I wanted you to escape, and that you refused.

Soc. But why, my dear Crito, should we care about the opinion of the many? Good men, and they are the only persons who are worth considering, will think of these things truly as they happened.

Cr. But do you see, Socrates, that the opinion of the many must be regarded, as is evident in your own case, because they can do the very greatest evil to any one who has lost their good opinion.

Soc. I only wish, Crito, that they could; for then they could also do the greatest good, and that would be well. But the truth is, that they can do neither good nor evil: they cannot make a man wise or make him foolish; and whatever they do is the result of chance.

Cr. Well, I will not dispute about that; but please to tell me, Socrates, whether you are not acting out of regard to me and your other friends: are you not afraid that if you escape hence we may get into trouble with the informers for having stolen you away, and lose either the whole or a great part of our property; or that even a worse evil may happen to us? Now, if this is your fear, be at ease; for in order to save you we ought surely to run this, or even a greater risk; be persuaded, then, and do as I say.

Soc. Yes, Crito, that is one fear which you mention, but by no means the only one.

Cr. Fear not. There are persons who at no great cost are willing to save you and bring you out of prison; and as for the informers, you may observe that they are far from being exorbitant in their demands; a little money will satisfy them. My means, which, as I am sure, are ample, are at your service, and if you have a scruple about spending all mine, here are strangers who will give you the use of theirs; and one of them, Simmias the Theban, has brought a sum of money for this very purpose; and Cebes and many others are willing to spend their money too. I say therefore, do not on that account hesitate about making your escape, and do not say, as you did in the court, that you will have a difficulty in knowing what to do with yourself if you escape. For men will love you in other places to which you may go, and not in Athens only; there are friends of mine in Thessaly, if you like to go to them, who will value and protect you, and no Thessalian will give you any trouble. Nor can I think that you are justified, Socrates, in betraying your own life when you might be saved; this is playing into the hands of your enemies and destroyers; and moreover I should say that you were betraying your children; for you might bring them up and educate them; instead of which you go away and leave them, and they will have to take their chance; and if they do not meet with the usual fate of orphans, there will be small thinks to you. No man should bring children into the world who is unwilling to persevere to the end in their nurture and education. But you are choosing the easier part, as I think, not the better and manlier, which would rather have become one who professes virtue in all his actions, like yourself. And indeed, I am ashamed not only of you, but of us who are your friends, when I reflect that this entire business of your will be attributed to our want of courage. The trial need never have come on, or might have been brought to another issue; and the end of all, which is the crowning absurdity, will seem to have been permitted by us, through cowardice and baseness, who might have saved you, as you might have saved yourself, if we had been good for anything (for there was no difficulty in escaping); and we did not see how disgraceful, Socrates, and also miserable all this will be to us as well as to you. Make your mind up then, or rather have your mind already made up, for the time of deliberation is over, and there is only one thing to be done, which must be done, if at all, this very night, and which any delay will render all but impossible; I beseech you therefore, Socrates, to be persuaded by me, and to do as I say.

Soc. Dear Crito, your zeal is invaluable, if a right one; but if wrong, the greater the zeal the greater the evil; and therefore we ought to consider whether these things shall be done or not. For I am and always have been one of those natures who must be guided by reason, whatever the reason may be which upon reflection appears to me to be the best; and now that this fortune as come upon me, I cannot put away the reasons which I have before given: the principles which I have hitherto honored and revered I still honor, and unless we can find other and better principles on the instant, I am certain not to agree with you;

no, not even if the power of the multitude could inflict many more imprisonments, confiscations, deaths, frightening us like children with hobgoblin terrors. But what will be the fairest way of considering the question? Shall I return to your old argument about the opinions of men? some of which are to be regarded, and others, as we were saying, are not to be regarded. Now were we right in maintaining this before I was condemned? And has the argument which was once good now proved to be talk for the sake of talking;--in fact an amusement only, and altogether vanity? That is what I want to consider with your help, Crito:--whether, under my present circumstances, the argument appears to be in any way different or not; and is to be allowed by me or disallowed. That argument, which, as I believe, is maintained by many who assume to be authorities, was to the effect, as I was saying, that the opinions of some men are to be regarded, and of other men not to be regarded. Now you, Crito, are a disinterested person who are not going to die tomorrow--at least, there is no human probability of this, and you are therefore not liable to be deceived by the circumstances in which you are placed. Tell me then, whether I am right in saying that some opinions, and other opinions, and the opinions of other men, are not to be valued. I ask you whether I was right in maintaining this?

Cr. Certainly.

Soc. The good are to be regarded, and not the bad?

Cr. Yes.

Soc. And the opinions of the wise are good, and the opinions of the unwise are evil?

Cr. Certainly.

Soc. And what was said about another matter? Was the disciple in gymnastics supposed to attend to the praise and blame and opinion of every man, or of one man only--his physician or trainer, whoever that was?

Cr. Of one man only.

Soc. And he ought to fear the censure and welcome the praise of that one only, and not of the many?

Cr. That is clear.

Soc. And he ought to live and train, and eat and drink in the way which seems good to his single master who has understanding, rather than according to the opinion of all other men put together?

Cr. True.

Soc. And if he disobeys and disregards the opinion and approval of the one, and regards the opinion of the many who have no understanding, will he not suffer evil?

Cr. Certainly he will.

Soc. And what will the evil be, whither tending and what affecting, in the disobedient person?

Cr. Clearly, affecting the body; that is what is destroyed by the evil.

Soc. Very good; and is not this true, Crito, of other things which we need not separately enumerate? In the matter of just and unjust, fair and foul, good and evil, which are the subjects of our present consultation, ought we to follow the opinion of the many and to fear them; or the opinion of the one man who has understanding, and whom we ought to fear and reverence more than all the rest of the world: and whom deserting we shall destroy and injure that principle in us which may be assumed to be improved by justice and deteriorated by injustice;--is there not such a principle?

Cr. Certainly there is, Socrates.

Soc. Take a parallel instance:-- if acting under the advice of men who have no understanding, we destroy that which is improvable by health and deteriorated by disease--when that has been destroyed, I say, would life be worth having? And that is--the body?

Cr. Yes.

Soc. Could we live, having an evil and corrupted body?

Cr. Certainly not.

Soc. And will life be worth having, if that higher part of man be depraved, which is improved by injustice? Do we suppose that principle, whatever it may be in man, which has to do with justice and injustice, to be inferior to the body?

Cr. Certainly not.

Soc. More honored, then?

Cr. Far more honored.

Soc. Then, my friend, we must not regard what the many say of us: but what he, the one man who has understanding of just and unjust, will say, and what the truth will say. And therefore you begin in error when you suggest that we should regard the opinion of the many about just and unjust, good and evil, honorable and dishonorable.--Well, someone will say, "but the many can kill us."

Cr. Yes, Socrates; that will clearly be the answer.

Soc. That is true: but still I find with surprise that the old argument is, as I conceive, unshaken as ever. And I should like to know whether I may say the same of another proposition--that not life, but a good life, is to be chiefly valued?

Cr. Yes, that also remains.

Soc. And a good life is equivalent to a just and honorable one--that holds also?

Cr. Yes, that holds.

Soc. From these premisses I proceed to argue the question whether I ought or ought not to try and escape without the consent of the Athenians: and if I am clearly right in escaping, then I will make the attempt; but if not, I will abstain. The other considerations which you mention, of money and loss of character and the duty of educating children, are, as I fear, only the doctrines of the multitude, who would be as ready to call people to life, if they were able, as they are to put them to death--and with as little reason. But now, since the argument has thus far prevailed, the only question which remains to be considered is, whether we shall do rightly either in escaping or in suffering others to aid in our escape and paying them in money and thanks, or whether we shall not do rightly; and if the latter, then death or any other calamity which may ensue on my remaining here must not be allowed to enter into the calculation.

Cr. I think that you are right, Socrates; how then shall we proceed?

Soc. Let us consider the matter together, and do you either refute me if you can, and I will be convinced; or else cease, my dear friend, from repeating to me that I ought to escape against the wishes of the Athenians: for I am extremely desirous to be persuaded by you, but not against my own better judgment. And now please to consider my first position, and do your best to answer me.

Cr. I will do my best.

Soc. Are we to say that we are never intentionally to do wrong, or that in one way we ought and in another way we ought not to do wrong, or is doing wrong always evil and dishonorable, as I was just now saying, and as has been already acknowledged by us? Are all our former admissions which were made within a few days to be thrown away? And have we, at our age, been earnestly discoursing with one another all our life long only to discover that we are no better than children? Or are we to rest assured, in spite of the opinion of the many, and in spite of consequences whether better or worse, of the truth of what was then said, that injustice is always an evil and dishonor to him who acts unjustly? Shall we affirm that?

Cr. Yes.

Soc. Then we must do no wrong?

Cr. Certainly not.

Soc. Nor when injured injure in return, as the many imagine; for we must injure no one at all?

Cr. Clearly not.

Soc. Again, Crito, may we do evil?

Cr. Surely not, Socrates.

Soc. And what of doing evil in return for evil which is the morality of the many--is that just or not?

Cr. Not just.

Soc. For doing evil to another is the same as injuring him?

Cr. Very true.

Soc. Then we ought not to retaliate or render evil for evil to anyone, whatever evil we may have suffered from him. But I would have you consider, Crito, whether you really mean what you are saying. For this opinion has never been held, and never will be held, by any considerable number of persons; and those who are agreed and those who are not agreed upon this point have no common ground, and can only despise one another when they see how widely they differ. Tell me, then, whether you agree with and assent to my first principle, that neither injury nor retaliation nor warding off evil by evil is ever right. And shall that be the premise of our argument? Or do you decline and dissent from this? For this has been of old and is still my opinion; but, if you are of another opinion, let me hear what you have to say. If, however, you remain of the same mind as formerly, I will proceed to the next step.

Cr. You may proceed, for I have not changed my mind.

Soc. Then I will proceed to the next step, which may be put in the form of a question:--Ought a man to do what he admits to be right, or ought he to betray the right?

Cr. He ought to do what he thinks right.

Soc. But if this is true, what is the application? In leaving the prison against the will of the Athenians, do I wrong any? or rather do I not wrong those whom I ought least to wrong? Do I not desert the principles which were acknowledged by us to be just? What do you say?

Cr. I cannot tell, Socrates; for I do not know.

Soc. Then consider the matter in this way:--Imagine that I am about to play truant (you may call the proceeding by any name which you like), and the laws and the government come and interrogate me: "Tell us, Socrates," they say; "what are you about? Are you going by an act of yours to overturn us--the laws and the whole state, as far as in you lies? Do you imagine that a state can subsist and not be overthrown by individuals?" What will be our answer, Crito, to these and the like words? Any one, and especially a clever rhetorician, will have a good deal to urge about the evil of setting aside the law which requires a sentence to be carried out; and we might reply, "Yes; but the state has injured us and given an unjust sentence." Suppose I say that?

Cr. Very good, Socrates.

Soc. "And was that our agreement with you?" the law would say; "or were you to abide by the sentence of the state?" And if I were to express astonishment at their saying this, the law would probably add: "Answer, Socrates, instead of opening your eyes: you are in the habit of asking and answering questions. Tell us what complaint you have to make against us which justifies you in attempting to destroy us and the state? In the first place did we not bring you into existence? Your father married your mother by our aid to beget you. Say whether you have any objection to urge against those of us who regulate marriage?" None, I should reply. "Or against those of us who regulate the system of nurture and education of children in which you were trained? Were not the laws, who have the charge of this, right in commanding your father to train you in music and gymnastic?" Right, I should reply. "Well then, since you were brought into the world and nurtured and educated by us, can you deny in the first place that you are our child and slave, as your fathers were before you? And if this is true you are not on equal terms with us; nor can you think that you have a right to do to us what we are doing to you. Would you have any right to strike or revile or do any other evil to a father or to your master, if you had one, when you have been struck or reviled by him, or received some other evil at his hands?--you would not say this? And because we think right to destroy you, do you think that you have any right to destroy us in return, and your country as far as in you lies? And will you, O professor of true virtue, say that you are justified in this? Has a philosopher like you failed to discover that our country is more to be valued and higher and holier far than mother or father or any ancestor, and more to be regarded in the eyes of the gods and of men of understanding? also to be soothed, and gently and reverently entreated when angry, even more than a father, and if not persuaded, obeyed? And when we are punished by her, whether with imprisonment or stripes, the punishment is to be endured in silence; and if she lead us to wounds or death in battle, thither we follow as is right; neither may anyone yield or retreat or leave his rank, but whether in battle or in a court of law, or in any other place, he must do what his city and his country order him; or he must change their view of what is just: and if he may do no violence to his father or mother, much less may he do violence to his country." What answer shall we make to this, Crito? Do the laws speak truly, or do they not?

Cr. I think that they do.

Soc. Then the laws will say: "Consider, Socrates, if this is true, that in your present attempt you are going to do us wrong. For, after having brought you into the world, and nurtured and educated you, and given you and every other citizen a share in every good that we had to give, we further proclaim and give the right to every Athenian, that if he does not like us when he has come of age and has seen the ways of the city, and made our acquaintance, he may go where he pleases and take his goods with him; and none of us laws will forbid him or interfere with him. Any of you who does not like us and the city, and who wants to go to a colony or to any other city, may go where he likes, and take his goods with him. But he who has experience of the manner in which we order justice and administer the state, and still remains, has entered into an implied contract that he will do as we maintain, thrice wrong; first, because in disobeying us he is disobeying his parents; secondly, because we are the authors of his education; thirdly, because he has made an agreement with us that he will duly obey our commands; and he neither obeys them nor convinces us that our commands are wrong; and we do not rudely impose them, but give them the alternative of obeying or convincing us;---that is what we offer, and he does neither. These are the sort of accusations to which, as we were saying, you, Socrates, will be exposed if you accomplish your intentions; you, above all other Athenians." Suppose I ask, why is this? they will justly retort upon me that I above all other men have acknowledged the agreement. "There is clear proof," they will say, "Socrates, that we and the city were not displeasing to you. Of all Athenians you have been the most constant resident in the city, which, as you never leave, you may be supposed to love. For you never went out of the city either to see the games, except once when you went to the Isthmus, or to any other place unless when you were on military service; nor did you travel as other men do. Nor had you any curiosity to know other states or their laws: your affections did not go beyond us and our state; we were your special favorites, and you acquiesced in our government of you; and this is the state in which you begat your children, which is a proof of your satisfaction. Moreover, you might, if you had liked, have fixed the penalty at banishment in the course of the trial--the state which refuses to let you go now would have let you go then. But you pretended that you preferred death to exile, and that you were not grieved at death. And now you have forgotten these fine sentiments, and pay no respect to us the laws, of whom you are the destroyer; and are doing what only a miserable slave would do, running away and turning your back upon the compacts and agreements which you made as a citizen. And first of all answer this very question: Are we right in saying that you agreed to be governed according to us in deed, and not in word only? Is that true or not?" How shall we answer that, Crito? Must we not agree?

Cr. There is no help, Socrates.

Soc. Then will they not say: "You, Socrates, are breaking the covenants and agreements which you made with us at your leisure, not in any haste or under any compulsion or deception, but having had seventy years to think of them, during which time you were at liberty to leave the city, if we were not to your mind, or if our covenants appeared to you to be unfair. You had your choice, and might have gone either to Lacedaemon or Crete, which you often praise for their good government, or to some other Hellenic or foreign state. Whereas you, above all other Athenians, seemed to be so fond of the state, or, in other words, of us her laws (for who would like a state that has no laws), that you never stirred out of her; the halt, the blind, the maimed were not more stationary in her than you were. And now you run away and forsake your agreements. Not so, Socrates, if you will take our advice; do not make yourself ridiculous by escaping out of the city.

"For just consider, if you transgress and err in this sort of way, what good will you do either to yourself or to your friends? That your friends will be driven into exile and deprived of citizenship, or will lose their property, is tolerably certain; and you yourself, if you fly to one of the neighboring cities, as, for example, Thebes or Megara, both of which are well-governed cities, will come to them as an enemy, Socrates, and their government will be against you, and all patriotic citizens will cast an evil eye upon you as a subverter of the laws, and you will confirm in the minds of the judges the justice of their own condemnation to you. For he who is a corruptor of the laws is more than likely to be corruptor of the young and foolish portion of mankind. Will you then flee from well-ordered cities and virtuous men? And is existence worth having on these terms? Or will you go to them without shame, and talk to them, Socrates? And what will you say to them? What you say here about virtue and justice and institutions and laws being the best things among men. Would that be decent of you? Surely not. But if you go away from well-governed states to Crito's friends in Thessaly, where there is a great disorder and license, they will be charmed to have the tale of your escape from prison, set off with ludicrous particulars of the manner in which you were wrapped in a goatskin or some other disguise, and metamorphosed as the fashion of run-aways is--that is very likely; but will there be no one to remind you that in your old age you violated the most sacred laws from a miserable desire of a little more life. Perhaps not, if you keep them in a good temper; but if they are out of temper you will hear many degrading things; you will live, but how?--as the flatterer of all men, and the servant of all men; and doing what?--eating and drinking in Thessaly, having gone abroad in order that you may get a dinner. And where will be your fine sentiments about justice and virtue then? Say that you wish to live for the sake of your children, that you may bring them up and educate them--will you take them into Thessaly and deprive them of Athenian citizenship? Is that the benefit which you would confer upon them? Or are you under the impression that they will be better cared for and educated here if you are still alive, although absent from them; for that your friends will take care of them? Do you fancy that if you are an inhabitant of Thessaly they will take care of them, and if you are an inhabitant of the other world they will not take care of them? Nay; but if they who call themselves friends are truly friends, they surely will.

"Listen, then, Socrates, to us who have brought you up. Think not of life and children first, and of justice afterwards, but of justice first, that you may be justified before the princes of the world below. For neither will you nor any that belong to you be happier or holier or juster in this life, or happier in another, if you do as Crito bids. Now you depart in innocence, a sufferer and not a doer of evil; a victim, not of the laws, but of men. But if you go forth, returning evil for evil, and injury for injury, breaking the covenants and agreements which you have made with us, and wronging those whom you ought least to wrong, that is to say, yourself, your friends, your country, and us, we shall be angry with you while you live, and our brethren, the laws in the world below, will receive you as an enemy; for they will know that you have done your best to destroy us. Listen, then, to us and not to Crito."

This is the voice which I seem to hear murmuring in my ears, like the sound of the flute in the ears of the mystic; that voice, I say, is humming in my ears, and prevents me from hearing any other. And I know that anything more which you may say will be vain. Yet speak, if you have anything to say.

Cr. I have nothing to say, Socrates.

Soc. Then let me follow the intimations of the will of God.

APPENDICES

Student ______________
Essay Topic ____________

I. Thesis and development

- A. Thesis
  1. Significance
  2. Manageability
  3. Clarity and unity of thesis statement
  4. Definition of key terms
  5. Clarification
- B. Development of argument
  1. Conclusion follows from premises
  2. Clarity of premises
  3. Soundness of premises
  4. Soundness of generalizations (induction)
  5. Absence of fallacies
- C. Support for argument
  1. Credible, unbiased sources
  2. Relevance and quality of evidence
  3. Adequacy of evidence
  4. Originality of evidence
  5. Specific examples
- D. Alterative viewpoints

II. Organization

- A. Clearly discernible, logical, organizational plan
- B. Clearly discernible introduction with thesis statement
- C. Clearly discernible and clearly stated conclusion
- D. Major point or premises clearly stated as topic sentence of paragraph
- E. Order of major points
- F. Paragraph coherence and transitions

III. Writing style and mechanics

- A. Correct grammar, punctuation, and spelling
  1. Absence of sentence fragments, dangling modifiers, run-on sentences, comma splices, and other major errors in sentence structure
  2. Absence of small mechanical errors such as misuse of apostrophes, hyphens, numbers, capitalization, and other punctuation
  3. Absence of errors in verb tense, subject/very agreements, and pronoun references
  4. Variety in sentence structure and punctuation
  5. Proper use of parallel structure

- B. Vocabulary
  1. Clear, accurate, non-generalized word choice
  2. Absence of slang expressions, colloquialisms, triteness, emotive language
- C. Awareness of audience
- D. Consistent point of view
- E. Appropriate documentation
- F. Title and title page
- G. Standard margins, tabs, and spacing of printed or typewritten papers

SENTENCE FRAGMENTS, RUN-ON SENTENCES, COMMA SPLICES

One popular traditional definition of a sentence is "a group of words that contains a subject and a verb and expresses a complete thought." Thus a sentence is not only a grammatical unit but a unit of thought as well. Problems arise for the reader when that unit is incomplete, in the case of the SENTENCE FRAGMENT, or when it is improperly joined with another unit, as in the case of a RUN-ON SENTENCE or a COMMA SPLICE. In all three cases, because some grammatical element is missing, the result is either that the thought or idea is not completely stated or that the relationship between that thought and the one preceding or following it becomes unclear and confused. The reader may be forced to back up and reread the passage repeatedly to try to sort out the ideas in it.

SENTENCE FRAGMENTS

A **sentence fragment** is a group of words punctuated as if it were a complete sentence, but it lacks some essential part.

1. **Some fragments lack a verb** or part of a verb. Such is the case with the following fragment:

> The antique leather-bound book lying on the table in the hall.

The word lying may appear to be a verb but is actually a participial modifier of book. There is no real verb present. To correct this type of fragment, add a verb:

> The antique leather-bound book lying on the table in the hall is very valuable.

Another possible remedy would be to turn lying back into a complete verb by adding an auxiliary verb:

> The antique leather-bound book was lying on the table in the hall.

2. **Some fragments lack a subject.** Usually the subject of such a fragment can be found in the preceding sentence. The fragment has been improperly divided from that sentence, and the remedy is to put the parts back together in one sentence.

> Rutherford took out a huge loan to buy an expensive speedboat. And then wrecked it only two weeks later.

The underlined fragment contains the verb wrecked, but wrecked's subject, Rutherford, is in the preceding sentence. The correction is simply

> Rutherford took out a huge loan to buy an expensive speedboat and then wrecked it only two weeks later.

Many similar fragments are phases that modify a word in the preceding sentence.

> The people coming out of the theater were surprised to see a fat, scantily-dressed man. Running down the street and screaming at the top of his lungs.

The underlined fragment modifies the word man in the preceding sentence; the period between the two parts should be removed so that they form one complete sentence. An alternate correction would be to give the fragment a subject and a complete verb:

> He was running down the street and screaming at the top of his lungs.

3. **Some fragments** do contain both a subject and its verb but are not complete sentences because they **are subordinate clauses** and thus are dependent upon another clause to complete their meanings.

> After I go to the store.
> Because he was sick.

Usually such fragments simply need to be rejoined with the sentence preceding or following.

> After I go to the store, I will clean the house and prepare dinner.
> Cosgrove abruptly left work two hours early because he was sick.

Do not be fooled by the length of such a dependent clause into thinking that it is an independent clause and thus able to be a complete sentence. Look carefully at the following example:

> When in the course of human events it becomes necessary for one people to dissolve the political bands which have connected them with another and to assume among the powers of the earth the separate and equal station to which the laws of nature and of nature's God entitle them.

If Thomas Jefferson had put a period at the end of this passage, he would have created a sentence fragment. Instead, he quite properly put a comma, followed by the sentence's independent clause:

> When in .... entitle them, a decent respect to the opinions of mankind requires that they should declare the causes which impel them to the separation.

4. **Some fragments lack essential punctuation.** The passage. If you can give me the directions.

looks like the type of dependent clause fragment discussed above. Actually, it is simply missing the punctuation needed to make its meaning clear:

> If you can, give me the directions.

In contrast to the sentence fragment, which is lacking or separated from elements needed to complete it, the RUN-ON SENTENCE and the COMMA SPLICE are the results when a writer joins two complete sentences together into one with no indication or not enough indication of the line of demarcation between the two thoughts.

RUN-ON SENTENCES and COMMA SPLICES

A **run-on sentence** is somewhat like the situation at an intersection where there is no stop sign or traffic light and two cars collide, entangling their bumpers so that it is difficult to separate them. The reader of a run-on sentence is reading along through the first idea when he collides head-on with the second idea because there is no signal word or mark of punctuation to indicate the junction. The reader is forced to back up and re-read the sentence to try to sort out the ideas in it.

> Much research has been done on this disease during the past fifteen years many scientists involved believe they may be close to discovering its cause.

The writer of this run-on sentence needs to provide the reader with a signal between years and many to indicate where the sentence's two related thoughts divide. Several options are available:

a. Put a period at the end of the first clause (after years) and capitalize the first word of the second clause (many). This would turn the compound sentence back into two single sentences. In the case of a very long run-on sentence, this procedure may be the best correction.

b. Put a semicolon between the two clauses:

> Much research has been done on this disease during the past fifteen years; many scientists involved believe they may be close to discovering its cause.

Or, put a semicolon and a conjunctive adverb (such as thus, however, moreover, nonetheless, nevertheless, as a result, furthermore, otherwise, consequently, hence, and therefore) between the clauses.

> Much research has been done on this disease during the past fifteen years; moreover, many scientists involved believe they may be close to discovering its cause.

NOTE: The semicolon goes before the conjunctive adverb. The conjunctive adverb is usually followed by a comma. The semicolon alone is enough of a marker to indicate the sentence junction, but the conjunctive adverb alone is not. One reason for this is that while the semicolon is always placed where the two clauses are joined, the conjunctive adverb may sometimes be placed within the second clause.

> Much research has been done on this disease during the past fifteen years; many scientists involved, moreover, believe they may be close to discovering its cause.

c. Put a comma and a coordinating conjunction (and, or, nor, for, but, yet, or sometimes so) at the point where the two clauses join.

> Much research has been done on this disease during the past fifteen years, and many scientists involved believe they may be close to discovering its cause.

NOTE: The conjunction alone is not enough, and the comma alone is not enough. Either one used alone signals a joining of or a break between only minor elements in the sentence, rather than the junction where two independent clauses or complete thoughts meet.

A **comma splice**, then, is the incorrect use of a comma alone to join two independent clauses into one sentence. This practice is analogous to placing a yield sign where a four-way stop is needed. The reader is given inadequate notice of a major intersection between thoughts:

> Much research has been done on this disease during the past fifteen years, many scientists involved believe they may be close to discovering its cause.

The proper way to correct a comma splice is to insert the missing conjunction after the comma. Correction methods a. and b. for run-on sentences, described above, are other alternatives. Simply removing the comma is not a correction since doing so creates a run-on sentence.

EXCESSIVE COMMAS

Rather than leaving out necessary commas, some students put in unnecessary ones and thus give false signals to the reader. This practice is analogous to placing a stop or yield sign in the middle of a block, where there is no intersecting traffic and not even a pedestrian crosswalk. The reason for the appearance of most excessive commas and other superfluous punctuation is that some student writers become uncomfortable when a sentence becomes long without having any internal punctuation. They mistakenly assume that a comma should be inserted wherever it would be necessary to pause for breath when reading the sentence aloud.

1. **Do not put a comma between a subject and verb** unless there is an intervening element that requires commas.

> The notoriously eccentric and ordinarily clumsy attorney Waldo Wangsted$\boxed{,}$ astounded the jury by turning a cartwheel during his opening statement.

Even though the preceding sentence is somewhat long, it should not have a comma between its subject and verb.

In the following sentences, commas do appear between the verb and its subject or some of its subjects but always for another reason:

Cosgrove, Rutherford, and Wangsted are our attorneys. (Items in a series)
Waldo Wangsted, my attorney, astounded the jury. (Appositive)
Waldo Wangsted, by the way, astounded the jury. (Parenthetical expression)
Waldo Wangsted, who had never lost a case, astounded the jury. (Non-restrictive adjective clause modifying the subject)
Waldo Wangsted, my friends, is the best possible candidate for mayor of our fair city. (Noun in direct address)

2. **Do not put a comma or a colon between a verb and its direct object.**

In a large picnic basket Cosgrove had packed$\boxed{:}$ sandwiches, pickles, potato chips, soft drinks, and cookies. (The colon here is incorrect, even though it introduces a list. When a colon introduces a list, it must follow a noun that labels the list.

In a large picnic basket Cosgrove had packed some goodies: sandwiches, pickles, potato chips, soft drinks, and cookies.

Please bring to camp the following items: extra clothing, toiletry articles, a sleeping bag, and a first aid kit.

Of course, the simplest correction for the original sentence about Cosgrove's picnic basket is simply to remove the colon.

Here is another very common wrong use of a comma after a verb:

No one in Tooleyville could believe$\boxed{,}$ that Wangsted was serious about running for mayor. (The noun clause beginning with that is the direct object of the verb could believe. The comma before that should be removed.)

No one could believe that Wangsted had decided$\boxed{,}$ to run against our beloved old Mayor Postlethwaite. (The infinitive phrase beginning with to run is the direct object of the verb had decided. The comma should be removed.)

3. **Do not put a comma between a verb and a subjective complement** (also known as predicate complement or predicate nominative):

Between television interviews and other campaign appearances Waldo Wangsted remained$\boxed{,}$ the busiest attorney in the five-county area. (The verb remained links the subject Waldo Wangsted with its subjective complement attorney. The comma must be removed.)

APOSTROPHES

1. Do not use an apostrophe to make a word plural.

Singular	Plural
The cat was hungry.	The cats were hungry.
Her party was great.	Her parties are great.
Where is the monkey?	Where are the monkeys?
We saw Mr. Smith.	We saw the Smiths.
He visited Sam Jones.	He visited the Joneses.

Notice that there are no apostrophes in any of the plurals.

2. Do use an apostrophe to indicate where letters have been omitted when a contraction is formed.

do not	don't
is not	isn't
of the clock	o'clock

3. Do use an apostrophe to make a noun possessive. Follow these two simple rules:

A. If the noun does not end in s, make it possessive by adding an apostrophe and an s.

the dog's bone
Tom's hat
the children's toys
men's clothing

B. If the noun ends in s, make it possessive by adding an apostrophe after the s.

Charles' hat
the boss' daughter (NOTE: In the case of a one-syllable word ending in s, it is common practice to add an s after the apostrophe for pronunciation purposes:
the boss's daughter
the kiss's effect
the girls' uniforms
the elephants' trainer

NOTE: When you need to make a word both plural and possessive, make it plural first by adding s, adding es, changing y to i and adding es, or making some other change, as in changing child to children. After you have made the word plural, then follow the rules above to make it possessive.

Singular	Plural	Plural Possessive
dog	dogs	the dogs' kennel
child	children	the children's toys
house	houses	the houses' roofs
Mr. Jones	the Joneses	the Joneses' house

Be alert to the fact that not only can inanimate objects, such as houses, be possessive, as in the houses' roofs, but nouns denoting abstractions can also be possessive:

this morning's news
a month's notice
two weeks' pay (note that this is both plural and possessive)
a day's wait
in an hour's time
a dollar's worth of jelly beans

4. Do not use an apostrophe to make a personal pronoun possessive. The following pronouns all function like his; they are possessive without needing an apostrophe.

my, mine
your, yours
his
her, hers
its (not it's, which is the contraction of it is or it has)
our, ours
their, theirs
whose (not who's, which is the contraction of who is or who has)

SUBJECT-VERB AGREEMENT

Subjects and verbs must agree in number. That means that a sentence or clause which has a singular subject must have a singular verb and a sentence or clause which has a plural subject must have a plural verb. If a sentence has one subject and several verbs, all the verbs must be in the same number as the subject. If a sentence has several subjects and only one verb, the verb normally must be in the plural.

Examples of subject-verb agreement errors:

1. The fraternity members, as well as their advisor, **prefers** an earlier rush.
   The size of the bears **startle** the zoo visitors.
2. The two girls and the boy **was** playing in the wading pool.
3. **Does** the laws passed by Congress effectively control the problem of environmental pollution?
4. The best tribute to his success as a teacher **are** the many students who sing his praises.
5. Oil and vinegar **are** a good salad dressing.
6. The family **has been** arriving for the reunion all morning.
7. In every corner of the room there **is** dancers.
8. Each of the students **need** individual help.
9. Neither of the books **were** available in the library.
10. He is one of the men who **opposes** the plan.

General solution:

Find the subject and make the verb agree with it. Ignore intervening phrases and clauses. The intervening words do not change the relationship between the subject and the verb.

Specific sample solutions:

1. Make the verb agree with its subject, not with some other noun between the subject and verb. Objects of prepositions cannot be subjects.

   The fraternity members, as well as their advisor, **prefer** an earlier rush.
   The size of the bears **startles** the zoo visitors.

2. If two or more subjects are joined with and, the verb must be plural.

   The two girls and the boy **were** playing in the wading pool.

3. Even when the verb comes before its subject, the verb must agree in number with the subject.

   Do the laws passed by the Congress effectively control the problem of environmental pollution?

4. If a linking verb connects a singular subject to a plural noun, the verb still must agree with the subject, not the complement. If the resulting sentence sounds awkward, change the order of the subject and the subjective complement.

   The best tribute to his success as a teacher **is** the many students who sing his praises.
   The many students who sing his praises **are** the best tribute to his success as a teacher.

5. If two subjects joined by and describe a single thing or idea or a pair of items so closely associated that they are condidered as a unit, the verb should be singular.

   Oil and vinegar **is** a good salad dressing.
   Bartles and James **has** become a popular wine cooler.
   Peace and quiet **is** all I want.

   Certain nouns that are plural in form are singular in meaning, such as mathematics, mumps, and news. They require singular verbs.

   Measles **is** seldom fatal but can have serious complications.

   A specialized instance of this rule is that the titles of literary or other artistic works, such as Romeo and Juliet, are considered singular nouns and thus take singular verbs.

6. Collective nouns used as subjects require a singular verb if the noun refers to the group as a unit and a plural verb if the noun refers to the individual members of the group. Consider the sense of the sentence when making the choice.

   Our family goes out to dinner weekly. (the family as a whole)
   The family have been arriving all morning. (the individual members of the family)

7. There is an adverb, not a subject. In sentences which appear to have a subject of there, the real subject usually occurs after the verb. Restate the sentence without the word there and the real subject of the sentence will probably be obvious. Make the verb agree with that subject.

   In every corner of the room there **are** dancers. (Dancers **are** in every corner of the room.)

8. Some indefinite pronouns (such as another, each, one, and those ending in -one, -body, and -thing) always require a singular verb. Others (such as both, few, and many) always require a plural verb. Yet others (such as all, any, most, more, none, and some) may take either a singular or a plural verb depending upon the noun they refer to.

   Each of the students **needs** individual help.
   Few of the people in the audience **agree** with the speaker.
   All of the students **have** left.
   All of the cake **has** been eaten.

9. If the sentence has a single subject which includes the indefinite pronoun either or neither, a singular verb is required. When the subjects are joined with or or nor (usually in combination with either or neither, the verb must agree with the subject closer to it. Try to place the plural subject last to avoid awkwardness.

   Neither of the books **was** available in the library.
   Neither my cousins nor my aunt **is** coming to the family reunion.
   Neither my aunt nor my cousins **are** coming to the family reunion.

10. If the antecedent of who, which, or that is singular, use a singular verb; if the antecedent is plural, use a plural verb. Refer to the section on pronoun reference for further help.

   He is one of the men who **oppose** the plan.
   We ate at a restaurant that **serves** paella.

PRONOUN AGREEMENT

A pronoun must agree with its antecedent (the noun a pronoun stands in for) in number and gender.

Examples of pronoun agreement errors:

1. A pastor's concern is for **their** parishioners.
2. Neither the students nor the instructor had done **their** work.

General solution:

Examine the antecedent of the pronoun to determine if it is singular or plural; make the pronoun match. Examine the antecedent for gender; if gender is included in the antecedent, the pronoun may also require an indication of gender.

Specific sample solutions:

1. Use singular pronouns to refer to singular nouns and plural pronouns to refer to plural nouns.

   Donald argued for **his** position while **his** colleagues defended **their** own views.

2. Use a plural pronoun to refer to two nouns joined by and. If two nouns are joined by or or nor, make the pronoun match the number of the antecedent nearer the pronoun.

   The instructor and the student agreed that **they** should meet.
   Neither the students nor the instructor had done **his** work.
   Neither the instructor nor the students had done **their** work.

3. If the antecedent is a collective noun or an indefinite pronoun, determine whether the sentence treats it as a unit (singular) or as separate individuals or parts (plural), and make the pronoun agree.

   The class will take **its** final on Monday at 7:00 p.m.
   A few still had not finished **their** examinations.

4. In order to avoid the awkward his or her usage to refer to a person of indefinite gender, it is advisable to rewrite the sentence in the plural or in such a way as to avoid the need to use a pronoun.

   A pastor's concern is for **his or her** parishioners.
   A pastor's concern is for **the** parishioners.
   Pastors' concerns are for **their** parishioners.

PRONOUN REFERENCE

If the reader cannot find the word in a sentence which could sensibly replace the pronoun being used, then the pronoun reference is vague or ambiguous and must be clarified.

Examples of pronoun reference errors:

1. When Karen talked to Sherri at noon, **she** did not realize that **she** might be leaving before the end of the day.
2. Al has learned that teasing makes people dislike him, **which** is a good thing.

General solution:

Always check a pronoun for its antecedent. You must be able to replace the pronoun with its antecedent and still have the sentence sound correct. When there are several possibilities, the nearest antecedent takes precedence. If there is no antecedent or there are several possible antecedents, rewrite the sentence to clarify the ambiguity or vagueness.

Specific sample solutions:

1. If a pronoun could refer to more than one antecedent (the antecedent is ambiguous), rewrite the sentence so that the reference is clear.

   When Karen talked to Sherri at noon, **she** did not realize that **she** might be leaving before the end of the day.
   When the two women talked at noon, Karen did not realize that Sherri might be leaving before the end of the day.

   Ralph said to Gus that **he** needed a new car.
   Ralph said to Gus, "I need a new car."
   Ralph said to Gus, "You need a new car."

2. Avoid the use of pronouns such as this or that or which to refer to a general state of affairs only implied in the sentence. Usually if you add a word or phrase after this or that, the problem will be solved. Other pronouns may require complete revision of the sentence to clear up the problem.

   There have been a number of improvements since Mayor Barkley took office; that pleases me.
   There have been a number of improvements since Mayor Barkley took office; that fact pleases me.

   Genetics is an exciting field, **which** is why I'm majoring in biology.
   Because genetics is an exciting field, I'm majoring in biology.

   Marvin had too much to drink last night. **This** is why he has a headache this morning.
   Marvin has a headache this morning because he had too much to drink last night.

3. Be sure to distinguish between humans (who) and nonhumans (that and which).

   The only one in the class **who** had been abroad was Nancy. (person)
   The only thing **that** he could do was to wait. (object)

4. That is used with restrictive (essential) clauses; which is used with non-restrictive clauses.

   The prank **that** I remember best was the time we filled the bronze statue with water.
   My favorite class, **which** is the only one I remember clearly, was second grade.

5. Do not use they or it without antecedents to describe people or things in general. Rewrite the sentence to provide a more specific noun to resolve the difficulty.

   They don't report the news accurately.
   Television newscasters don't report the news accurately.

   All passengers had been searched for weapons, but **it** did not prevent the skyjacking.
   Even the fact that all passengers had been searched for weapons did not prevent the skyjacking.

   The new prison has updated facilities, but **they** still treat inmates harshly.
   The new prison has updated facilities, but the inmates are still treated harshly.

6. Remember that if the antecedent of the pronoun is singular, make the pronoun singular. If the antecedent is plural, make the pronoun plural. Refer to the section on pronoun agreement for additional help.

Even though the typical student enjoys entertainment, parties, and athletic events, our survey found that **they** also work hard on their school work.
Even though typical students enjoy entertainment, parties, and athletic events, our survey found that **they** also work hard on their school work.

An American expects **their** government to protect them.
Americans expect **their** government to protect them.

If a person watches too much television, **they** may become a couch potato.
People who watch too much television may become couch potatoes.

PRONOUN CASE

A pronoun used as a subject or subjective complement must be in the **subjective** or **nominative case.** A pronoun used as an object--whether a direct object, indirect object, object of a preposition, objective complement, or object of an infinitive, gerund, or participle--must be in the **objective case.**

Nominative or Subjective Case	Objective Case
I	me
you	you
he, she, it	him, her, it
we	us
they	them
who	whom
whoever	whomever

1. Most pronoun case errors occur in sentences where a pronoun is linked with a noun by and:

Ralph and **them** left together.
Me and Sarah went to the mall.
That package was for my sister and **I**.
Everybody except George and **I** wanted to go to the rock concert.

In sentences of this type, the error and its solution usually become obvious if the noun plus and portion of the sentence is removed:

Them left together.
Ralph and **they** left together.

Me went to the mall.
Sarah and **I** went to the mall.

That package was for **I**.
That package was for my sister and **me**.

Everybody except **I** wanted to go to the rock concert.
Everybody except George and **me** wanted to go to the rock concert.

In the last example above, the fact that the sentence's verb, wanted, comes immediately after the pronoun makes it especially tempting to use the subjective case pronoun **I**. But notice that George and me are objects of the preposition except and thus must be in objective case. The real subject of wanted is everybody.

2. Other common pronoun case errors occur in using **who** and **whom** or **whoever** and **whomever**. Some students avoid using whom or whomever at all, while others overcorrect, always using whom when often who is correct:

Give the package to **whomever** answers the door.
Whom do you think is the best candidate?
Who will your brother vote for?

As always, the case of the pronoun--whether **who** or **whom** is needed--depends on the pronoun's function in the sentence. Because forms of **who** often appear in subordinate clauses or questions, their function is not always immediately obvious. In the first wrong example, whomever appears to be the object of the preposition to. But upon closer examination, it can be seen that the whole noun clause whoever answers the door is the object of to. Within that clause, whoever is the subject of the verb answers, and thus the subjective case is the correct form:

Give the package to **whoever** answers the door.

In the second wrong example, the main clause is do you think, and the rest of the sentence is a noun clause direct object of the verb do think. When we examine the who clause alone, the error and its solution become obvious:

Whom is the best candidate?

Because is needs a subjective case pronoun for its subject, whom must be changed to who.

Who is the best candidate?
Who do you think is the best candidate?

In the third wrong example, the error can be understood and solved by turning the question back into a statement:

Who will your brother vote for?
Your brother will vote for **who.**

It is now apparent that the pronoun must be the object of the preposition for and thus must be changed to objective case:

Your brother will vote for **whom.**
Whom will your brother vote for?

3. Subjective complement pronouns must be in the subjective case, but informal conversational usage sometimes leads to written errors of this type:

Yes, this is **her.**
The guilty party was **him.**

The pronouns must be corrected to subjective case. If the result sounds awkward, try reversing the subject and subjective complement.

Yes, this is **she.**

The guilty party was **he.**
He was the guilty party.

4. Some pronoun case errors occur with pronouns used as subjects of subordinate clauses of comparison that are only partially expressed (elliptical clauses). The fact that most of the clause is implied rather than expressed may disguise the fact that the pronoun is a subject and lead to incorrect use of the objective case pronoun:

Sam doesn't like chocolate as much as **me.**
Tina can run as fast as **him.**

The pronouns in these sentences are actually subjects, as can be seen when the subordinate clauses are fully expressed:

Sam doesn't like chocolate as much as **I** like chocolate.
Tina can run as fast as **he** can run.

In normal usage, the part of the subordinate clause that repeats something in the main clause is abbreviated or left implied:

Sam doesn't like chocolate as much as **I** do (like chocolate).
Tina can run as fast as **he** can (run).

Use of the wrong case in some clauses of comparison can lead to ambiguity. In the following sentences, the objective case pronouns could be correct or incorrect, depending on what the writer intends to say:

> Tina doesn't like Sam as much as **me**.
> Tina doesn't trust Mildred as much as **him**.

The objective case pronouns are correct if the writer means

> Tina doesn't like Sam as much as she likes **me**.
> Tina doesn't trust Mildred as much as she trusts **him**.

Me and **him** are direct objects in the clauses "she likes me" and "she trusts him." But the objective case pronouns are incorrect if the writer intends these comparisons:

> Tina doesn't like Sam as much as **I** do.
> Tina doesn't trust Mildred as much as **he** does.

Thus in sentences of this type, choosing the correct case is absolutely crucial to convey the intended meaning.

FAULTY PARALLELISM

Parallelism in sentence structure means that when sentence elements are parallel in function, they should also be parallel in form. When they are not, the error is termed "faulty parallelism."

Examples of faulty parallelism:

1. Rita **hurried** to class, **opened** the door, and **sits** in the back row.
2. Ethics are important **personally**, **politically** and **in one's work**.
3. *Good research **skills**, **willingness** to learn*, and ***determined** to master the material* are critical ingredients in a student's success.
4. After ***reading** all her novels*, ***writing** several letters of inquiry*, and ***he also did** quite a bit of research*, Martin finally got an interview with the famous mystery writer.

General solution:

Recognizing the **function** of the word, phrase, clause, or verbal in the sentence is the key to maintaining parallelism in a sentence. When elements have the same function in the sentence, each element must be the same kind of word or phrase--noun, adjective, prepositional phrase, and so on. For example, in the sentence "He likes to swim, fishing, and boating," there are three elements that have the same function. To swim, fishing, and boating are all direct objects of the verb likes. Since they are parallel in function, they should be parallel in form: "He likes swimming, fishing, and boating."

Specific sample solutions:

1. Rita **hurried** to class, **opened** the door, and **sat** in the back row.

   There are three parallel verbs in this sentence. They must all be in the same tense, in this case the past tense.

2. Ethics are important **personally**, **politically** and **professionally**.

   There are three parallel adverbs in this sentence. However, in the faulty example, one of those coordinate elements is a prepositional phrase instead of an adverb.

3. *Good research* ***skills***, ***willingness*** *to learn*, and ***determination*** *to master the material* are critical ingredients in a student's success.

   There are three parallel subjects in this sentence. Each must be a noun. Although the other italicized words are also part of each subject, those words modify the noun itself, which is the central part of the subject.

4. After ***reading*** *all her novels*, ***writing*** *several letters of inquiry*, and ***doing*** *quite a bit of research*, Martin finally got an interview with the famous mystery writer.

   There are three parallel objects of the preposition after in this sentence. The object of a preposition is a noun or noun equivalent. Since two of the objects are gerunds (which function as nouns), the third must not only function as a noun but also be a gerund.

PARTS OF SPEECH

A. NOUNS:

It is not enough to know that a noun names a person, place, or thing. To understand nouns, you must also realize that there are certain characteristics which nouns possess.

1. Nouns can be made plural: horse, horses; child, children.

2. Nouns are often signaled by an article (a, an, the) or a demonstrative adjective (this, that, these, those) or a possessive pronoun (or pronominal adjective, as they are sometimes called) like my, our, your, his, her, its, or their, or by an adjective like several, many, few, or both. When you see a word accompanied by one of these, you can be fairly certain it is a noun in that sentence:

   an apple, these people, my cat, few books

   Of course, there may be intervening words (adjectives).

   a delicious apple, these crazy people, my dumb cat, few French books

3. Nouns are used in certain ways in sentences:
   a. Nouns as **subjects:** An apple is a good snack.
   b. Nouns as **direct objects:** John ate an apple.
   c. Nouns as **predicate nominatives** (or **subjective complements**): My favorite snack is an apple.
   d. Nouns as indirect objects: Give that apple a good coating of caramel.
   e. Nouns as **objective complements:** Chris named his dog Rex.
   f. Nouns as **appositives:** Chris's dog, Rex, is a mongrel.
   g. Nouns as **objects of prepositions:** Chris brought a bone for Rex.
   h. Nouns of **direct address:** Rex, you are a good dog.

4. Nouns can be made possessive: Rex, Rex's; man, man's

B. PRONOUNS:

A pronoun takes the place of a noun. The purpose of pronouns is to prevent repetition; without pronouns we would be forced to say such things as "Tell John that when John has finished John's work John may go for a coke with John's friends." We would, of course, say instead, "Tell John that when he has finished his work he may go for a coke with his friends," substituting he and his rather than repeating the noun.

Of course, the meaning of a pronoun (its antecedent) must always be clear. Assuming that the antecedent has been named in an earlier sentence, the following pronouns can be used in the same way as the nouns in Part A:

1. **Subject:** It is a good snack.
2. **Direct object:** John ate it.
3. **Predicate nominative** (or **Subjective complement**): This is it.
4. **Indirect object:** Give it a good coating of caramel.
5. **Objective complement:** Because of the nature of the objective complement, pronouns are seldom used in this way. But here is one example: The author gave too much away when she called the murderer him.
6. **Appositive:** This structure is rare for pronouns, but it does occur with intensives: He himself will do the work. It also may occur this way, though it is rare because it sounds awkward: One boy, probably he, will be selected.
7. **Object of a preposition:** Chris bought a bone for him.
8. Pronoun of **direct address:** This is rare because the only pronoun that can be used this way is you, and the result always sounds rude. However, though socially unacceptable, it is grammatically possible: You, come here.

POSSESSIVES:
A pronoun can take the place of a possessive noun.

> This is John's book.
> This is his book.

One question always arises: Is this a pronoun or an adjective? It has properties of both; it is a pronoun because it takes the place of a noun (the possessive noun, John's) and it is an adjective because it modifies book. Sometimes we call these pronominal adjectives.

C. ADJECTIVES:

An adjective modifies a noun or pronoun, telling which, what kind of, or how many. The word **modifies** means "changes," and an adjective changes a noun or pronoun simply in the sense that it tells more about it, thus changing what the reader or listener knows about the word--the person, place, or thing.

I like that movie. (Which movie? That one.)

He is a tall boy. (What kind of boy? A tall one.)

This is a metal statue. (What kind of statue? A metal one.)

There are several reasons for this problem. (How many reasons? Several reasons.)

Note that in English there are many words which can be more than one part of speech, depending on the function of the word in the individual sentence. This is sometimes confusing, especially with adjectives and nouns. In one of the sentences above, metal is used as an adjective telling what kind of statue; often the word is used as a noun: The statue is made of metal (object of the preposition of).

D. ADVERBS:

An adverb modifies a verb, an adjective, or another adverb and tells when, where, how, or to what degree. (Adverb phrases and clauses can also tell why and under what condition, but no single-word adverb can express these complex ideas.)

I'll go tomorrow. (When?) Modifies the verb go

Put the books here. (Where?) Modifies the verb put

He ran fast. (How?) Modifies the verb ran

She is very talented. (To what degree?) Modifies the adjective talented

She sang amazingly well. (To what degree?) Modifies the adverb well

E. PREPOSITIONS:

A preposition is a connecting word which shows the relationship between its object and another word in the sentence. A preposition always occurs in a phrase, since it always has an object. (Definition: a **phrase** is a group of two or more words performing a single function.) There may be more than two words in a **prepositional phrase** if the noun or pronoun which is the object of the preposition has one or more modifiers. To see that a preposition shows the relationship between its object and another word in the sentence, observe how the relationship between the boy and the house changes when you change the preposition:

The boy ran (through the house.)
The boy ran (around the house.)
The boy ran (under the house.)
The boy ran (behind the house.)

Each prepositional phrase shown here is composed of a preposition, its object (house in each case), and the adjective modifying the object (the in each case).

The above prepositional phrases are all adverbial. Some prepositional phrases are adjectival:

The roof (of the house) is green. (What kind of roof?)

COMMON PREPOSITIONS:

of, in, on, onto, unto, to, for, from, behind, before, after, toward, at, near, down, up, over, under, through, among, between, by, except, with, without

Some prepositions are two or three words used together: instead of, because of, in case of, in order to, according to.

Some of the above words are not always prepositions. As always, this depends on the function of the word in the sentence.

He ran down the street. (Down is a preposition because it connects its object, street, with ran and shows the relationship between the two words.)
He fell down. (Down is an adverb because all by itself it tells where he fell.)
The pillow is made of down. (Down is a noun because it names a thing and is used as the object of a preposition.)
Did he down the ball? (Down is a verb because it shows action and tells what the subject did.)

F. VERBS:

Verbs are divided into two kinds, action verbs and "being" or linking verbs. Action verbs name the action done by the subject in a sentence, as down does in the last sentence under prepositions, above.

He hit me.
He wrote some letters.
He acted foolishly.
I see a bluebird.

Linking verbs do not show action. They link the subject to additional information about the subject.

I am unhappy.
He became a fine man.
He feels bad.

Linking verbs are forms of to be, to feel, (except when it means to touch), to become, to grow (when it means to become), etc.

G. CONJUNCTIONS:

A conjunction connects words, clauses, or phrases.

Coordinating conjunctions connect words, phrases, or clauses which are equal: and but, or, nor, yet, both... and, not only...but also, either... or, neither... nor

John and Mary are partners for the dance. (Connects two subjects)
I want to help you, but I don't know how. (Connects two independent clauses)
He is neither in the house nor on the porch. (Connects two prepositional phrases)
I want both pie and cookies. (Connects two direct objects)
He is not only intelligent but also handsome. (Connects two predicate adjectives)

Subordinating conjunctions connect a subordinate (or dependent) clause with the word in the main clause which the dependent clause modifies.

I will help you if you want me to. ("If you want me to" is an adverbial dependent clause modifying will help and telling under what conditions. If is the connecting word.)

VERBALS: PARTICIPLES, INFINITIVES, GERUNDS

A. PARTICIPLES:

A participle is a verb form used as an adjective. It is sometimes the present participle form, ending in ing; sometimes the past participle form, ending in d, ed, t, or en.

A burnt child dreads the fire.
A written note from your parents is necessary.
There was a carefully folded shirt in the drawer.
We found a smoldering fire in the woods.

We are seldom particularly interested in distinguishing between participles and simple adjectives in examples like those above. When the participle has an object or when it is modified by prepositional phrases, however, distinguishing that it is a participle becomes more important.

Participial phrases:

Hoping for a letter from John, Mary watched anxiously for the mail.

The game having been called because of rain, the players went home. (This is the absolute phrase; the participle modifies game.)

The chaperons posted at every door cast a spell of gloom over the party.

Beware of the dangling participle. In the examples above, the participles clearly modify nouns; Mary, game, chaperons. But careless writers sometimes come up with gems like this: Standing in the doorway, the man could be seen coming up the path. (Coming up the path clearly modifies man, but who was standing in the doorway?)

B INFINITIVES:

An infinitive is a verb form used as an adverb, an adjective, or a noun. It is the to-- form of the verb: to run, to sing, to be, to say, etc.

Do not confuse infinitives with prepositional phrases beginning with to, such as to town, to the movies, etc.

Only its use in the sentence can tell you whether an infinitive is an adverb, an adjective, or a noun.

1. Infinitives as adverbs: To show us what he could do, Tim made us sit down. (Tells why Tim made us sit down.) He came to help us. (Tells why he came.)

2. Infinitives as adjectives: We have an apartment to rent. (Tells what kind of apartment.) There is a constant need to be careful. (Tells what kind of need.)

3. Infinitives as nouns:
Subject: To err is human.
Direct object: He wants to be good.
Subjective complement: To know her is to love her.
Appositive: His desire, to succeed in life, suffered a severe setback.

An **infinitive phrase** is made up of an infinitive and any words that modify it, plus its object if it has one, and, of course, any words modifying the object. A few infinitive phrases include a subject of the infinitive: I want Sally to meet you. In the sentences above, the infinitive phrases are as follows:

To show us what he could do (what he could do is a noun clause used as the direct object of the infinitive; us is its indirect object.)
To be careful (careful is a complement)
To be good (good is a complement)
To love her (her is the direct object of the infinitive)
To succeed in life (in life is a prepositional phrase modifying to succeed.)
Sally to meet you (Sally is the subject of the infinitive and you is the direct object of the infinitive)

C. GERUNDS:

A gerund is a verb used as a noun. This means that a gerund names something: an activity (fishing, building, skating, throwing, dancing, hoping, etc.). Gerunds all end in ing. However, not everything that ends in ing is a gerund. It is a gerund if it is used as a noun is used:

1. Subject: Crying only made her look uglier.
2. Direct object: Stop that humming.
3. Subjective complement: Her only talent was singing.
4. Indirect object: Give water-skiing a chance before you decide you don't like it.
5. Object of a preposition: He gave all of his attention to winning.
6. Noun of direct address: Fishing, how I love you! (Very unlikely)
7. Appositive: His favorite activity at camp, boating, was all he wrote about in his letters home.

A **gerund phrase** is made up of a gerund and any words which modify it, and its object if it has one. Because it is a verb form (although used as a noun), it can have an object. Also, it can be modified not only by adjectives, as nouns are, but by adverbs, as verbs are.

> Constant crying only made her uglier. Constant crying is a gerund phrase. Constant is an adjective modifying crying, telling what kind of crying.
>
> Crying so heavily only made her look uglier. Crying so heavily is a gerund phrase. Heavily is an adverb telling how; so is an adverb modifying heavily, telling to what degree heavily.
>
> Crying herself to sleep made her look uglier than ever the next morning. Crying herself to sleep is a gerund phrase. The pronoun herself is the direct object of the gerund crying. To sleep must be included in the phrase because it modifies crying.

INDEPENDENT AND DEPENDENT CLAUSES

A **clause** is a group of words with a subject and a verb.

An **independent clause** is one which can stand alone. It could be used as a sentence.

An independent clause is necessary for a complete sentence. If a sentence has only one independent clause and no dependent clause, it is a **simple sentence.**

A dependent clause (or **subordinate clause**, the terms are synonymous) cannot stand alone. It depends upon the statement in the main (or independent) clause to give it meaning. The idea expressed in a dependent clause should be subordinate to (lower, of lesser importance than) the idea in the independent clause.

KINDS OF DEPENDENT OR SUBORDINATE CLAUSES

A. ADJECTIVE CLAUSES: Adjective clauses modify nouns or pronouns and tell which, what kind of, or how many (nearly always which). Note that this definition is the same as the definition of an adjective.

The man whom I met in Seattle once knew my father. The independent clause is "The man once knew my father." Whom I met in Seattle modifies man and tells which man. Note that whom I met in Seattle has a subject and a verb: I met. Whom is the direct object in the clause.

The book that I left here yesterday belongs to Tom. The independent clause is "The book belongs to Tom." That I left here yesterday modifies book and tells which book.

Sometimes an adjective clause could stand alone as a question. Don't be fooled by this. For example, in the sentence, "The boy who is standing on the corner is my brother," "who is standing on the corner" could stand alone as a question; but since it is obviously not intended to be a question in this sentence, it is not an independent clause.

B. ADVERB CLAUSES:

Adverb clauses modify verbs, adjectives, or other adverbs and tell where, when, how, to what degree, why, or under what conditions. Note that these are the same parts of speech modified by simple adverbs and that the questions answered are also the same except that single-word adverbs cannot tell why or under what conditions, simply because the ideas involved are too complicated to answer in one word.

If it rains, we shall have the party in the gym. "If it rains" is an adverb clause. It is the subject; rains is the verb. The clause modifies the verb shall have because it tells under what conditions we shall have the party in the gym.

He is studying hard because he wants to make the honor roll. "because he wants to make the honor roll" modifies is studying and tells why he is studying hard.

He stood where he could see the crowd. "where he could see the crowd" modifies stood and tells where he stood.

He can run faster than I can run. "than I can run" modifies the adverb faster and tells to what degree faster. (In sentences with than clauses, the verb in the adverb clause is often omitted, or sometimes part of the verb is omitted. The above sentence would be more likely to read, "He can run faster than I can." In such cases the verb, or part of the verb, is understood.)

C. NOUN CLAUSES:

Noun clauses take the place of nouns in a sentence. Like nouns, with the exception of appositives they cannot be omitted without making nonsense of the sentence; therefore, the sentence with a noun clause is difficult for some students because when the noun clause is removed, what is left usually makes no sense. This leads the student to believe that there is no independent clause. You must realize that the noun clause is part of the independent clause.

1. Noun clause as subject of sentence: That he is popular is obvious. The main idea of the sentence is that something is obvious. What is obvious? That he is popular. The whole clause (subject: he; verb: is) is the subject of the second is, the verb of the independent clause. Note that you can usually substitute a noun for a noun clause: His popularity is obvious.

2. Noun clause as direct object: We all know that he is popular. The whole clause is the direct object of the verb know.

3. Noun clause as indirect object: Give whoever comes to the door the basketball tickets. Whoever comes to the door is used as the indirect object of give. Note that you could substitute a noun (John, the boy, Mrs. Smith) for whoever comes to the door.

4. Noun clause as predicate nominative or subjective complement: His opinion was that we should withdraw our troops at once. That we should withdraw our troops at once equals opinion, comes after the verb, and completes the thought of the main clause. Therefore, it is the subjective complement. In this case, one cannot substitute a single noun for the noun clause; the idea is simply too complicated to be expressed in a single word. But in this example, one could: His objective was that we should surrender; His objective was our surrender.

5. Noun clause as appositive: His opinion, that we should withdraw our troops at once, gained our support. This noun clause can be omitted and leave a meaningful independent clause; His opinion gained our support. This is true because any appositive can be omitted; it is grammatically a non-essential element in a sentence.

6. Noun clause as object of a preposition: Vote for whoever seems to be the best candidate.

KINDS OF SENTENCES

A. The **simple sentence** contains one independent clause.

After lunch we should study.

B. The **compound sentence** contains two or more independent clauses.

After lunch we should study, but we may go to a movie instead.

C. The **complex sentence** contains one independent clause and one or more dependent clauses.

After lunch we should study if we expect to pass the test. If we expect to pass the test is an adverb clause modifying should study; therefore, the sentence is complex.

After lunch we, who are not exactly at the top of our class, should study if we expect to pass the test. The sentence now has two dependent clauses, but still only one independent clause. The sentence is complex.

D. The **compound-complex sentence** has two or more independent clauses and one or more dependent clauses.

After lunch we should study if we expect to pass the test, but we may go to a movie instead.

DOCUMENTATION

In the course of composing essays for LA 101 and LA 102, you will probably borrow ideas, phrases, or quotations from several sources. The material that follows provides only a very brief introduction to the topic of documentation. When problems or questions arise on matters of format, consult your classroom instructor or the MLA Handbook for Writers of Research Papers, third edition, by Joseph Gibaldi and Walter S. Achtert (New York: Modern Language Association of America, 1988). This book provides numerous examples and is easy to use. For the purposes of LA 101 and LA 102, most textual references can be made in the body of your essay without the more elaborate structure of footnotes or endnotes that are used in more extensive or formal research.

Your attention to documentation is important for at least three reasons. First, as you know from the discussions on the nature of critical thinking, the common quest for learning values knowledge and its sources. Thus you need to provide evidence and clear textual references to support your position. Second, as someone engaged in the communal activity of critical thinking, you need to preserve accuracy and provide the means for your readers to go to the sources you cite in order to satisfy their curiosity or to do further reading or research on the topic. Third, as an individual critical thinker, you will wish to safeguard standards of intellectual honesty and academic integrity by correctly listing your sources. Thus you can deflect any concern about the quality of your evidence or research and thereby avoid problems with plagiarism or academic misconduct.

There are three major methods for giving credit to your sources: quotation, paraphrase, and inclusion in a list of works cited. Material which you quote will obviously be surrounded by quotation marks to indicate that you are borrowing the exact words of someone else. If you quote from a primary text, you can most easily document your source by listing a page reference in parentheses at the end of the quotation. If you quote from a secondary source, you can also list the author's name and a page reference at the end of the quoted passage. Consider the following examples:

Example A: Quotation from a primary text

> "...I say again that the greatest good of man is daily to converse about virtue, and all that concerning which you hear me examining myself and others, and that the life which is unexamined is not worth living...." ("Apology" 55)

In this case the precise words within quotation marks appeared on page 55 of the "Apology." Full bibliographic information about this text would appear at the end of your essay under "Works Cited."

If you decide to paraphrase material, you will not use the wording of the original source; instead, you will summarize and transform into your own words the major idea or evidence you wish to borrow. Because the material is not quoted, you will not use quotation marks, but you still must give credit to the author of the idea or the text since the knowledge was not originally your own.

Example B: Paraphrase

We ought to be more concerned about our ethical life than about simple life itself ("Apology" 48).

Beyond using parenthetical references at the end of quotations and paraphrases, you should include a list of "Works Cited" at the end of your essay. Here you will give full bibliographic information so that interested readers can go to these sources on their own. "Works Cited" are typically arranged in alphabetical order by the last name of the author. If the source does not list an author, use the title. The first line of an entry should be flush with the left margin, but any subsequent lines will be indented five spaces from the left.

Example C: Book

DeLillo, Don. White Noise. New York: Penguin Books, 1985.

Notice the punctuation and the sequence of information:

--author's last name
--comma
--author's first name
--period
--book title (underlined)
--period
--place of publication
--colon
--publisher
--comma
--date
--period

Example D: Journal Article

Levinson, Marjorie. "Back to the Future: Wordsworth's New Historicism." South Atlantic Quarterly 88 (1989): 633-659.

Notice the punctuation and the sequence of information:

- --author's last name
- --comma
- --author's first name
- --period
- --quotation marks
- --article title
- --period
- --quotations marks
- --name of journal (underlined)
- --volume number
- --year (within parentheses)
- --colon
- --page numbers over which the article extends
- --period

Example E: Magazine article--no author listed

"Brennan Resigns from Supreme Court." US News and World Report 24 July 1990: 17-19.

Notice the punctuation and the sequence of information:

- --quotation marks
- --article title
- --period
- --quotation marks
- --name of magazine (underlined)
- --date of magazine
- --colon
- --page numbers over which the article extends

Note: If an author is listed, the author's name will come first as in Example D. Newspaper articles follow nearly the same model; they usually include the section letter after the page number.

Example F: Reading from the course text

Russell, Bertrand. "Why I Am Not A Christian." Reasoning and Writing: An Introduction to Critical Thinking. Ed. Donald L. Hatcher et al. Baldwin City, KS: Baker University Center for Critical Thinking, 1990. 127-140.

Notice the punctuation and the sequence of information:

--author's last name (author of the reading)
--comma
--author's first name
--period
--quotation marks
--title of reading
--period
--quotation marks
--title of course text (underlined)
--period
--Ed. Donald L. Hatcher et al.
--Baldwin City, Ks
--colon
--Baker University Center for Critical Thinking
--comma
--1990
--period
--page numbers over which reading extends
--period

Critical Thinking and Literary Criticism

Elizabeth Drew has written that "the impulse behind all art is to give a personal form to some part of the raw material presented by life."[1] This is to say that the work of literature, though it imitates or represents the world or some part of it, is never merely an objective transcription or photograph of reality. In a work of literature we look at the world through another's eyes, not "the world" but Shakespeare's or Mark Twain's or Emily Dickinson's vision of the world. Different artists or writers, depicting the same slice of life, may give us utterly different views of it--some melancholy, some joyful, some humorous, some tragic or pathetic, some emphasizing specific features of the subject, some emphasizing others.

A given writer's particular vision will be shaped by his or her general philosophy of life, system of values, ethical beliefs, and so forth. Part of the critical reader's job is discovering and reflecting on the author's vision as it expresses itself in the work. A work's general theme may be a simple observation: the limitations of human knowledge; the brevity of life, of beauty, of love; the perversity of fate or the gods; the regenerative powers of human nature. A theme may be propositional or didactic; that is, it may take the form of a lesson, moral, or precept.

In order to discover the author's vision in a literary work, we must be able to identify the author's voice from among the various voices we may hear in the work. Aristotle provides us with a foundation for this inquiry in his Poetics, where he attempts to classify all literature into three categories or genres based on the voices present in them. In lyric poetry, the one voice we hear is normally the poet's, reflecting on some aspect of the world or of human experience. In drama, the author disappears behind his cast of character. In narrative or fiction, we hear a combination, an alternation of the author's voice with those of the characters.[2]

Normally, the task of identifying the author's voice is relatively simple in poetry and third-person narrative. In drama, where the author is "absent," we must infer the vision from clues the text provides. Though playwrights do not speak to us directly in their own voice, they can sometimes nonetheless impose their vision quite unmistakably through a variety of indirect means, manipulating the spectator into identification with certain characters and their views and implying judgments of the characters and their actions through selection of detail, juxtaposition, emphasis, exaggeration, and other techniques.

An aspect of literary criticism which troubles many college students is the apparent indefiniteness or open-endedness of the enterprise. Many of the most interesting questions we address in analyzing works of literature are not amenable to any single definitive solution, a single "right answer." To some students, interpretation of literature may seem nothing more than the expression of subjective opinions, with no way to arbitrate among them. But though neither the methodology nor the conclusions of literary study can have the strict rigor of mathematics or the controlled experiments of the sciences, the interpretation of literature does share certain general thought processes and methods with these disciplines. First, the process of interpreting a piece of literature begins with observation. Through careful reading, the reader becomes familiar with the literary territory that needs interpreting. After careful observation, the actual interpretation begins in the reader's mind as a hunch or suspicion, roughly analogous to the hypothesis of the scientist. Then, like scientists, literary scholars "test" their interpretations or hypotheses by gathering and evaluating evidence--primarily from the text itself, secondarily from sources outside the text. And like scientists, they may consult the findings of other experts in the field. In science, a given phenomenon can sometimes be explained in more than one way. And in literary criticism, equally impressive cases can sometimes be made for divergent readings of a text.

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[1] Poetry, New York: Dell, 1959, p. 85

[2] In modern fiction we often encounter a variation of this form called "first person narrative," in which the author abdicates his voice to one of the characters who narrates the story (as in Great Expectations and Huckleberry Finn).

In this course, interpretations of literature will be evaluated on the basis of how they conform to the general principles of critical thinking: the reliance on reasoning in the search for truth and the careful and unbiased examination of evidence, including a fair and thorough examination of opposing views.

Critical Thinking and Values

"...why [do] theories of virtue accomplish so little even though they contain so much that is convincing to reason?... The answer is only that the teachers themselves have not completely clarified their concepts..."

--Immanuel Kant, Foundations of theMetaphysics of Morals

Our discussion will be adequate if it has as much clearness as the subject admits..., for it is the mark of an educated man to look for precision in each class of things just so far as the nature of the subject admits.

--Aristotle, Nicomachean Ethics

A.1 The Importance of Values

The importance of values can hardly be overstated. To a large extent, the values we hold determine how we live our lives. That is to say, we tend to do what we do because we value what we value. For example, it is because we value meaningful labor that we work hard in school to prepare ourselves for such employment.

Because there is considerable disagreement over values, we might first be inclined to treat them as merely matters of preference or individual taste, and hence not the sort of things about which one can think critically. Such a subjective approach, however, need not be taken. The position is often the result of a hasty generalization that begins with the observation that some values are indeed subjective or matters of taste; e.g., some people like stripes, others like prints; some like sweet wine, others prefer dry. But it does not follow that because values are subjective in some areas, they are subjective in all areas. Indeed, if all values were merely subjective, it would make no sense to say that one set of values was in any way superior or inferior to any other. All choices of how to conduct our lives would then be equally meaningful or, for that matter, meaningless. Whether one chose to be a child molester or to dedicate one's life to serving the poor, neither choice could be said to be better or worse. It would be a matter of taste. Most of us, however, do pass judgment and believe that in fact some choices are better than others. But to make a judgment implies that we appeal to some objective standard of value by which we support such claims. Conversely, if the person who believed that values were merely matters of taste were asked why he or she preferred Socrates' life to the child-molester's, the only justified response would be, "Because I like Socrates." No reasons, such as "Because it is wrong to hurt the helpless," could be given because to give reasons would be to admit that value judgments are more than matters of personal taste. To give reasons is to appeal to evidence that is intended to provide good reasons for saying that one form of life is better than another.

So, if we think that any person, action, policy, institution, or life-style is in fact better than another, then it is better with respect to some reasons. These reasons, whatever they may be, function as a standard by which we judge one thing to be better than another. The problem is, while we are inclined to evaluate and pass such judgment on almost everything, we are not equally inclined to think critically about the reasons or standards we employ when we pass such judgments.

Nonetheless, because values play such an important role in our lives, we must learn to think carefully and critically about them. What we deem good and bad turn out to be nothing less than the rudders by which we steer our lives.

A.2 Values in General

Given the importance of our values, we need to develop a general theory that allows us to both understand their nature and to think more carefully about them. What follows is a somewhat simplistic account and may admit of counter-examples. Simplistic as it maybe, it is, however, for the most part applicable. As critical thinkers, it is important to remember that one cannot expect the same level of certainty in all areas of inquiry.

Let us begin with the following distinction: as self-conscious human beings, beings able to transcend social manipulation, we deliberate about many important issues -- what sort of vocation to pursue, whether to marry, whom to marry, whether or not to have children, which political values to endorse or which to oppose, and ultimately what sort of life to live. Most of these deliberations can be divided into two categories: one area involves making decisions about ends or goals; a second area involves deliberating about the means most appropriate to achieve these goals.[1] For example, someone might decide to become a doctor. Once the person has chosen such a goal, he or she must then reflect on how to achieve it.

Ends are that for the sake of which we do what we do; means are the projects we adopt in order to attain our ends. We value the means, then, because we value the ends for which they are necessary. It follows, then, that if it were not for our chosen ends, then those activities which are means to those ends would not have value. Conversely, if one has chosen certain ends, then those means that are necessary conditions for attaining those ends must also have value. So, ends have value because we chose them, and the means have value because they are necessary for attaining the ends.

Given such an approach to values, it would be a mistake to think that all values are a function of personal tastes or human desires. While we might give an end value because we desire it, we might not desire the means necessary to attain the end. Yet, if the end is given value, those means that are necessary for attaining the end must also be given value, regardless of how one "feels" about the means. For example, the person who desires to become a doctor, might not desire to take the college courses required to attain a medical degree. Nonetheless, those courses necessary for attaining the end of being a doctor must also be valued.

From such considerations about ends and means it seems reasonable to adopt the following general maxim about values: if x is deemed to have value and y is a necessary condition for x, then y must also be given value.

It is often the case that our ends are not what we would call "ends in themselves" or ultimate ends. Many ends are themselves means to yet higher or more fundamental ends. For example, the goal of taking a vacation may be a means to replenishing one's energies so one can work more effectively. The vacation has value only in relation to one's work. So, the value of some ends is dependent upon the value of yet more fundamental ends.

One way to tell whether or not what is thought to be a final end is in fact a means to some higher end is to ask, why do I value this end? If this question can be answered, "Because I...." then the end in question has value only as a means to some more fundamental end. For example, it makes sense for the person who has chosen to become a doctor to ask why he or she desires that particular end. That is to say, what reasons are there for choosing to become a doctor? The person might respond by saying that becoming a doctor is important because it is a means to earning a great deal of money. In this case, however, a more reflective questioner might further ask, "If my only reason for becoming a doctor is to make money, why choose to become a doctor? There are other less demanding ways to earn money. Why not choose to be a drug dealer?" Clearly, by itself, earning money is not an adequate answer to the question, Why choose to become a doctor? There must be other reasons, goals to which practicing the art of medicine is a satisfactory means. Upon reflection, the person might then go on to provide additional reasons; e.g. to serve humanity, to eliminate human pain and suffering, and to gain social recognition and self-respect. Being a doctor then is an appropriate means to these stated ends, while selling drugs would not be.

But we should notice that even here, questioning the value of a chosen end cannot stop. It makes sense for us to ask, why should one want to serve humanity, eliminate human pain and suffering, earn money, and gain social recognition and self-respect? What ends are these means to achieving? Where is their value? After considering this question, the person might say that attaining these goals is part of what most people consider a "happy life." As Aristotle pointed out in the first book of his Nicomachean Ethics, human happiness can be considered the supreme goal. It makes no more sense to ask why one wants to be happy. Our conception of human happiness will be that for the sake of which we do all that we do, the end which gives value to all other goals. Happiness is not a means to anything higher; it is the end in itself.

Nonetheless, as critical thinkers, we would be remiss if we blindly accepted the position that the realization of each person's vision of human happiness is indeed the ultimate goal for human existence. That would surely lead us back into the subjectivist position. In his dialogue "Meno," Plato pointed out that without qualification happiness by itself cannot be the goal of human life. If it were the ultimate goal, then nothing would be lacking. Yet we sometimes know people who are blissfully happy but judge their happiness to be less than complete because these people are lacking in some virtue; i.e., they do not deserve to be happy, or they attained their happiness through unjust means. As Plato pointed out, if the goal of human life is only to fulfill individual desires, surely we must add "with justice." This is because we criticize those who fulfill their desires unfairly or at the expense of others. If we do not add such a qualification, then to lead a life of a successful criminal would be "the good life." So, to attain with justice and fairness of whatever part of human happiness one gains appears to be an important qualification when we try to determine what constitutes the ultimate good for humans. This is because to be happy without deserving it is something we criticize (usually more so in others than in ourselves). (The important question of what constitutes being deserving of happiness will be treated later in the discussion of ethical values.)

A.3 What is Human Happiness?

If our idea of human happiness is that for the sake of which we do all that we do, that which gives meaning and focus to all of our choices, it is important that each of us thinks carefully about what sort of life will constitute a happy one.

First we should consider and evaluate the alternatives. Is the happy life a life of pleasure? Is it a life of honor and social esteem? Is it a life of moral and intellectual development? Or is it a life of service? How can we decide?[2] Because human beings are not mere parrots or sponges, ultimately each of us must decide. Even to choose to take the advice of others (perhaps parents, peers, or even Plato) is still to make a decision.

Yet how should one go about making the choice? Are we again forced to treat values as matters of personal taste? That is, as individuals decide differently about what sort of life will bring them happiness, so those things which are means to these ends, will also be very different. Different ends require different means. So, it seems, in spite of our arguments against treating values as matters of personal taste, in the end, what has value will depend on each person's idea of a happy life and this will vary from person to person.

Such a subjectivist conclusion, however, does not match with the facts. If happiness consisted in persons attaining their individual goals, then it would seem that whenever anyone did, they should at the same time be happy. Conversely, when individuals are not happy, it should be because of their inability to fulfill their goals. The idea that one could make a mistake or use poor judgment in choosing one's goals would not make sense. Personal happiness would always be a function of personal taste and one's ability to achieve one's goals. Happiness would have nothing to do with the wisdom of one's choice. However, such a position hardly seems reasonable. If human happiness were but a function of achieving personal goals, why are many people who have attained their chosen goals unhappy? For example, some people who have chosen to live their lives attaining wealth and fame and who have attained these goals, have nonetheless ended their lives in despair. If it is possible to attain one's goals and yet remain unhappy, then we must conclude that human happiness is not simply a function of realizing one's goals. If some realize their goals but remain unhappy, then some notions of "the good life" or happiness must be more appropriate or fulfilling than others. If so, then some conceptions of human happiness can be called better or worse, or right or wrong, just as our beliefs about the external world can be considered either reasonable or unreasonable. Some choices are wiser than others.

If there are right and wrong choices, how can we decide which is better and which is worse? Let us begin by pointing out the obvious: we are all human beings, and what we seek is human happiness.[3] As humans, we have needs and enjoyments that are unique, as well as many that are common to plants and other animals. Are there not some unique conditions which, at least for the most part, must be fulfilled in order for humans (as opposed to other animals) to be happy? If there are, then these values will not be relative to personal taste, but dependent upon our needs as human beings. Must there not also be some conditions common to all animals that must be fulfilled in order for humans to be happy?

Following this line of thought, thinkers such as Plato, Aristotle and John Stuart Mill argued in their writings on ethics that human beings, like other animals, have certain biological needs--clean air, shelter, food, and water--and as human animals there are specific capacities which set us apart from other animals--ethical behaviors, religious and aesthetic experiences, and problem-solving and reasoned judgment.[4] After observing many individuals who appeared happy, each concluded that people who fulfilled these human capacities were happier than those who fulfilled only those capacities common to other animals, e.g., eating, drinking, sleeping, and copulating. Plato pointed out that if there were those who remained skeptical of this position, they were usually those who had not experienced the higher pleasures peculiar to humans.[5] As Mill said, "Next to selfishness, the principal cause which makes life unsatisfactory is want of mental cultivation."[6] Such persons naturally believed that the pleasures common to animals were the epitome of human happiness. Skeptics were encouraged to seek out those who had experienced both animal and human pleasures and simply ask them which brought greater pleasure. One thing is certain, anyone who has only experienced animal pleasures is not in a position to pass judgment (even though they seem always inclined to do so).

If we agree that these thinkers were on the right track, then we should aim for a kind of life that maximizes the odds of fulfilling these higher human capacities. In addition, this conception of a happy life entails the value of any condition necessary for attaining such a life; e.g., a certain level of economic prosperity, opportunities for leisure, social security, and adequate education.

Thinking about human happiness and the means for its fulfillment allows us to see that many things often held in high esteem are not means to any chosen goal, but are valued primarily because of social conditioning or peer pressure. Understanding this helps us to decide what is really important and what is superfluous. For example, if one's goal is to become a doctor, doing well in school is a necessary condition for entrance into medical school, while pledging a Greek organization, driving a certain kind of car, or wearing a certain kind of clothes is not. So, by thinking clearly about values we can more easily decide where to direct our energies, even though some decisions may run counter to our feelings.

Thinking carefully about values can also lead to insight about certain pathological mental states. For example, the sense that one is leading a meaningless life would be a natural response to living a life void of clearly defined values and goals. It might be the case, given our analysis of values, that those who feel their lives are meaningless are persons who lack a clear conception about what constitutes "that for the sake of which they do what they do." It seems obvious that if the value of an activity is found in its serving well as a means to some higher goal, but one has no clearly-defined goals, no vision of the good life, and only some vague feeling about human happiness, then the activities which make up such a life will indeed seem empty, pointless, and meaningless. It is little wonder that life itself will seem meaningless. If it did not, the person's mental faculties as well as sensitivity may not be functioning properly.

We should understand, however, that not all activities we choose are "for the sake of some end." Some activities are done for their own sake and are ends in themselves. One does not, for example, stop to smell a flower, listen to a bird's song, or gaze at a beautiful sight in order to attain some higher end. Such immediate pleasures appear to be ends in themselves. Pleasurable as they may be, by themselves they seem to be insufficient to constitute a happy life, even though we might not like to live a life void of such simple immediate pleasures.

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A.4 Evaluating Things and Institutions

Any discussion of values would be incomplete without at least a brief analysis of the value of things and what makes some things "good" and others "bad." As we have seen throughout this text, critical thinking is evaluative thinking. To evaluate is to judge or rank the things in question. When we rank things we say that some are better than others. For example, we know enough about arguments and reasoning to know that some are better than others. In fact, we know what makes a good argument good. But what about things? Why are some things called 'good' and others 'bad'? Is there any logic here or is it all a matter of personal whim or cultural bias?

As a point of departure, let us begin by looking at arguments. Our understanding of what makes good arguments good may serve as a methodological model for evaluating other things. Arguments are artifacts. They are things produced by humans to achieve specific purposes. As we have seen, their purpose seems to be at least threefold: first, arguments aim at discovering the truth (induction); second, arguments aim at showing what a position implies and preserving the truth (deduction); and third, arguments are used to convince others of the reasonableness of some belief, action, or policy. Good arguments are those that perform these functions well. Hence, it seems that we call certain kinds of arguments good because they function as arguments are intended to function. They serve each of the three purposes. (We should note that arguments that are not truth preserving or are weak inductive arguments, even though they may convince others, are called "bad." The first two functions should always take priority over the latter.)

Can we make the same claim about things in general? Can we say that good things are those which function well; that is, they function in the manner for which they were intended, and bad things function poorly? To use an example from Plato's Republic, is not a good knife one that functions the way a knife is intended to function, while bad ones do not function as knives are intended? It seems that such a claim can be generalized to other sorts of things.

The function of a thing or institution is the end or purpose the thing is intended to achieve, and the value of the thing is relative to how well it serves as a means to achieving that end. So, when we critically evaluate such things as institutions, social practices, our homes, our cars, and even our clothes, in each case we should ask what function these things are intended to perform. Whether or not it is good or bad will be determined by how close the thing in question approaches its ideal function. For example, if one decides that the function of an automobile is only to provide safe, dependable transportation, then any auto which fulfills these functions will be "good." As the function is defined more complexly, the idea of a "good car" will also become more complex. Obviously, as the function of a specific kind of thing is defined differently by different people, so the value of different things to different individuals will vary. What constitutes "a good car" for one who sees the function of a car as a symbol of social status or a long term investment will differ from that of the person who sees a car's function in terms of safe, dependable transportation. Hence, in the realm of automobiles alone, there are multifarious versions of "the car."

When one is trying to determine the value of any particular kind of thing and when the thing serves a complex function, one must order the functions in terms of their priority. One must determine which functions are essential and which are not. For example, an automobile might function both as a mode of transportation and a status symbol. But these functions are not of equal value. It seems essential that to function as an auto, it must first provide transportation. All else is of secondary importance. Hence, if we were to generalize our thinking about automobiles, when the function of something is complex, we must order our priorities and ask which qualities are essential to the thing and which are of lesser importance. The process is the same, whether what is in question is the value of various kinds of government, personal relations, one's career goals, or social practices.

In general, things, practices, or institutions are good in so far as they fulfill the function they were designed to fulfill. Things are not so good in so far as they do not fulfill their proper function. Good essays, for example, communicate clearly and forcefully to the reader what the author intends. Bad essays are not clear, and the reasons given to support the thesis are not forceful enough to convince an honest skeptic. Good governments fulfill the function that people create governments to fulfill; bad governments fall short. So, while there may be legitimate disagreement over the function of an institution, or practice, once the function is determined, it is possible to pass reasoned judgment on the quality of practice.

One problem with this approach to the value of institutions and things is that it ignores the problem of evaluating the ends for which institutions or practices were developed. We might all agree that institutions are good in so far as they achieve the purposes for which they were designed, but how do we evaluate the worth of these ends? In the 19th century, balls and chains were valuable because they were effective means for keeping slaves from running away, but we see today that void of the institution of slavery such devices have no value. In addition, we see that the institution that gave such devices value is itself an unacceptable practice. Because slavery was a bad end, and the tools used to make it more effective were likewise bad--no matter how well designed they might have been.

How though do we come to such conclusions about such institutions? One approach is to see that institutions, like arguments, are made by humans to serve specific human purposes; e.g., the institution of slavery was created to serve the labor needs of those who owned land. If the labor needs could be met more effectively by other means, the institution could be judged valueless. So, as the socio-economic situation that gave rise to the institution changes, so the value of the institution must change. If an institution is no longer needed or does not serve the purposes for which it was created, then its worth must be re-evaluated.

Another more important approach to evaluating institutions is one that transcends questions of ends and means or human purposes. The standard for evaluation is that ethical values. From an ethical perspective, if an institution, such as slavery, destroys human dignity or treats humans as if they were unequal, then it should be opposed on ethical grounds. Obviously, the institution of slavery can be opposed on such ethical grounds.

As we shall see, of all of the things we value, ethical values may be the most important. This is because It is only by endorsing certain ethical values that human culture and the individuals who make it up can flourish. This is a strong claim for which much argument is needed.

A.5 Ethical Values

We saw in the first section of this chapter that human happiness was "that for the sake of which" we do what we do, and hence particular things, institutions, or activities had value in so far as they were means to our happiness. But, we also saw that happiness without qualification could not be the ultimate human good. This was because it was possible to imagine blissfully happy persons living lives we could not endorse because they had not attained their goals fairly and so were not deserving of their happiness. In other words, they had used means to attain their goals which were unethical.

To some, such a claim may have sounded strange because it assumes that there is such a thing as "ethical behavior" and that some acts are ethical, while others are not. Since the time of Plato, there have been persons who were skeptical of ethical judgments. Defensible ethical judgments assume objective moral standards, but because what is called ethical or moral varies from culture to culture, they have thought there were no standards. Hence defensible ethical critique was impossible. Such persons are called ethical relativists. As we saw in Chapter Two, the problem for critical thinkers is that if the relativist position is correct, then the objective standards needed for ethical evaluation do not exist. Without at least the possibility of objective standards, ethical judgment becomes a matter of individual or group taste rather than an appeal to reason, a matter of prejudice rather than logic, or a function of ideology rather than rationality. So, if we are going to pass judgment on those persons who attain their goals unethically, we must first show the error in the relativist's position.

As critical thinkers, the first thing we should do when confronted with an important claim that is not self-evident (and few important claims are self-evident) is ask what reasons there are for believing it; i.e., what are the arguments for the relativist position? Once we are clear on the arguments then we can use our logical tools to evaluate them. If the arguments are strong, we should accept the claim; if they are weak, we have no reason to accept it. Some would say that to accept a claim without good reasons is itself immoral because it sets a bad example.[7]

One argument often given for the claim that there are no universal ethical principles is that different cultures have adopted different ethical standards, and hence no universal ethical standards or principles exist. Let us call this The Belief Argument. Africa, Russia, India, the United States all tend to disagree on ethical issues. Also, within any one culture, what is ethically acceptable tends to change over time. For example, in 18th century America, slavery was acceptable; by the 19th century it was questionable, and by now it is considered immoral. Such developments are given as evidence that there are no objective ethical principles.

It is easy to show the weakness of this argument. It assumes that the only notion of what is right is what people in some culture at some time believe to be right. Not only does such an assumption beg the question of whether there are objective principles, but we know that the fact that people might believe something to be the case does not entail that it is the case. That would indeed be a strange rule of inference: If persons p believe A is true, then A is true. If we adopted such a rule, it would allow us to infer that if someone or group of persons believed the earth was flat, then the earth is flat. The rule would also allow us to infer that if another group believed the earth is not flat, then the earth is not flat. Hence, if accepted, the rule allows us to infer contradictory positions as both true. As we saw in Chapter Two with our discussion of the Rejection Principle, if a position entails a contradiction, we can then reject the argument. So, the first argument based on people having different moral beliefs about ethics can be rejected. People do in fact have different beliefs, but it does not follow that each belief is equally right.

Another argument often given in support of ethical relativism is one based on the wide disagreement over ethical issues. Relativists claim that if there were universal ethical principles, they would have been discovered and people would agree. Let us call this The Disagreement Argument. It is a variation of The Belief Argument. In essence, it says that if person A believes p and person B believes not -p, then both p and not -p are equally acceptable, and if both p and not -p are equally acceptable, there can be no universal principle which says p is wrong or -p is right or vice versa.

Just as in the case of belief, we can grant that people disagree over ethical issues, but that does not entail the conclusion that no answer acceptable to both parties can be found or that one position is not in fact more reasonable than another. Because people disagreed over whether the sun went around the earth or the earth went around the sun had nothing to do with whether the earth orbited the sun or not, nor does the disagreement over ethical issues entail there is no correct answer or that there are no objective principles of right and wrong.

So, if The Belief Argument and The Disagreement Argument are the only arguments given in support of the relativist position, an honest inquirer has no reason to believe the conclusion that ethical principles are relative to each culture or perhaps to each individual.

Another way to attack the ethical relativist is to accept the position, and see what consequences the position entails. By virtue of The Rejection Principle, if the position entails unacceptable consequences, then it can be rejected.

First, if we assume that there are no objective ethical standards, it would be impossible for us to judge the practices of other nations, cultures, or individuals outside our culture. To pass judgment assumes that the persons who judge believe they are correct. But how could relativists believe they were correct when they believe there are no standards for judgment? For a consistent relativist, the notion that our culture is ethically better than it was for no longer endorsing slavery would make no sense. If there are no objective standards, the notion of "getting better" or "getting worse" becomes meaningless.

Perhaps the most disturbing consequence of a relativist ethics is that the very idea of giving reasons for why one act is ethically admissible while another is not makes no sense. As we saw in our discussion of values, the idea of giving reasons for a belief means that we appeal to some objective standard by which can evaluate the reasonableness of the position in question, regardless of the culture in which it is found. The reasons that a consistent relativist can give for adopting one set of ethical principles over another must only be "That's the way I feel," or "That's what my peers tell me," or "That's what my culture believes." To give an answer such as, "This way of doing things helps our culture to prosper, and we desire to prosper," is not an answer open to a relativist. Such a response is an appeal to the objective (albeit questionable) moral principle: if a practice helps a culture prosper, then that practice is ethically permissible to adopt.

So, given its overall unreasonableness, if we reject the ethical relativist's position, how is it that we can make sense of ethical judgments and the values they endorse? How can such values be derived? How can they be applied? How can our ethical decisions be defended?

Thinking about ethical values should not be construed as particularly different than thinking about good and bad arguments, good and bad cars, or good and bad laws. Throughout our study of critical thinking, a general pattern of inquiry has been emerging: when we studied the nature of reasoning we first studied what reasoning or logic was, its essence turned out to be those arguments where premises provided strong support to conclusions. The support was understood in terms of logical form where, at best, the form of the argument was such that if the premises were true, the conclusion could not be false. We have also seen that to appreciate the process involved in formal reasoning, we needed to understand the purpose, goal, or function of reasoning. We saw that good reasoning was that which achieved its purpose; i.e., good arguments were effective in discovering and preserving the truth, and in convincing others to accept the position.

In an analogous way, this same sort of procedure can be used in order to understand and think critically about ethics.

First, we must understand what ethics is and then discover its purpose. Once we understand the nature and purpose of ethics, we will be able to see why certain "ethical values" or principles are necessary and hence must be given value in any ethical system. Otherwise, the system will not achieve the purpose of ethics. In a like manner, we shall see why certain other principles can never be endorsed in any ethical system.[8]

Ethical principles are principles which tell us what we ought and ought not to do; e.g., "One ought to be honest," or "One ought to help others," or "One ought to respect persons." The ought in these sentences is not a prudential or conditional ought based on human needs or desires such that if one desires this end then one "ought" to adopt these means. Such a prudential use of ought, was used in our previous example, "If one wants to be a doctor, then one ought to take some science courses."

The use of ought in ethical statements is different. Their use implies unconditional commands that tell us what we ought to do, as opposed to conditional statements. Unconditional commands tell us to perform certain actions, regardless of our desires or inclinations, or whether the action is personally beneficial; conditional statements tell us what means to adopt, once we have an end. For example, if someone proposed the following conditional principle as an ethical principle we would all laugh: "If you think you have a good chance of being paid for your services, then you ought to help persons who are in need." An ethical command simply says "One ought to do x." There are no conditions or antecedents placed on the obligation to carry out the command.

We should notice that if persons only helped others whenever they thought they were going to be paid, we would not say that their actions were unethical, bad or immoral. Such actions would simply be lacking in moral worth; they are amoral and should neither be praised nor blamed. Obviously, it is better to help others than not to help, regardless if one is being paid or not. It just turns out that such behaviors are not what we talk about when we talk of ethical behavior.

Second, in addition to being unconditional, ethical principles are those principles by which we pass judgment or evaluate the ethical value of actions, policies, and institutions. Just as the knowledge of the principles of logic allows us to evaluate the reasonableness of certain patterns of reasoning, so knowledge of ethical principles allows us to evaluate human behavior, etc. And conversely, as we have seen in our critique of ethical relativism, any act of judging implies that those who judge are employing or at least assuming certain principles.

Ideally, once one understands certain general principles of ethics, reasoning about ethical issues should be no different than reasoning about matters of fact. For example, consider the argument to show that Socrates is mortal:

p1. If someone is a person, then that person is mortal.
p2. Socrates is a person.
C. Hence, Socrates is mortal.

Reasoning about ethical issues would follow the same pattern. By first establishing a major premise that states some general ethical principle and showing that some particular case is an instance of the general principle, we can derive our particular conclusion.

p1. If someone does x, then that person has committed an unethical act.
p2. Smith's act was and instance of x.
C. Hence, Smith committed an unethical act.

A common problem with such reasoning about ethical issues is how we decide whether or not some particular act is indeed an instance of the universal principle stated in the major premise. For example, two people may agree to the general principle that if some social institution exploits women, then the institution is immoral. But they may not agree whether some particular institution, such as traditional marriage or being a housewife, is an instance of the general principle. This is one reason why there tends to be much more disagreement over ethical questions than over factual ones. The disagreement is seldom over ethical principles, but rather whether particular cases are instances of the principles. No one openly claims that people ought to exploit others; the debates are over what counts as exploitation.

Given that we have some understanding of the nature of ethics and its principles, if we are to follow our prescribed method of inquiry, we must now ask, what is the purpose or function of such principles? What function do ethical systems serve? Why were they created?

Ethical principles are sets of behavior-guiding rules which humans adopt, not to make life difficult, but to make things easier. Their function as behavior-guiding principles is not to make people feel guilty, but rather to guide human actions so that we can more easily realize our goal of human flourishing in a social setting. If humans were gods, and hence perfectly good and self-sufficient, they would need neither societies nor ethics. But, being neither perfectly good nor self-sufficient, we must adopt certain rules that prescribe certain duties and which guide our behavior in social settings. The rules are such that if they are followed, the attainment of human happiness is made more likely for all. In other words, systems of ethical principles are created because they have general utility for individuals living in a social setting. In addition, they provide us with standards by which we judge whether individuals are persons of integrity and principle or whether they lack such moral virtues. Such persons endorse principles which, if all adopted, would undermine the social setting needed to attain happiness.

It is important to see that while ethical systems function as a means to individual happiness that the rules within any system will not permit each individual to seek his or her happiness without regard for the happiness and rights of others. That is to say, while ethical systems were created to enhance individual self-fulfillment, the rules within the system will limit individuals' unbridled search for fulfillment and self-satisfaction.

Given our general understanding of both the nature and purpose of ethical systems, we should see that not just any principle can be an ethical principle. We can see that there are certain conditions which any proposed principle or rule of ethics must meet in order to be considered "ethical." Our manner of reasoning is analogous to geometers when they point out that once one understands the definition of a triangle, then one sees that there are certain minimum conditions any proposed figure must satisfy before it can be called a triangle. Given the nature and purpose of ethical systems, not just any principle can be called "ethical."

First, we saw that the nature of ethics implies the notion of the unconditional application of the rules. Hence, any proposed principle must be able to be applied unconditionally and universally to all persons. Moral principles command unconditionally just like Physical laws apply to all objects. In other words, as the philosopher Immanuel Kant has pointed out, a principle which prescribes any particular kind of behavior must be able to be a universal law, or to use his language, "Act only on that maxim which could be willed to be a universal law."[9] (The word, maxim means a description which translates a particular action into a general principle guiding human behavior.)

But here someone might say, "How can universalization be tested for or limit ethical rules? Can't any behavior be willed to be a universal law?" In short, doesn't such thinking simply lead us back to relativism where any act or policy can be called ethical, depending upon what any individual is inclined to will or willing to accept?

In order to answer such an objection, we need to get clear on what it means to say a maxim "can or can not be willed." To will that a certain sort of human behavior become universal law means to desire that some proposition becomes a law of human behavior. First, we must assume that to will a maxim is also to believe what is claimed in the maxim is true. It obviously makes no sense to say "I believe that p, but think p is false." To say I believe that p should be the case, assumes that p is thought to be true. From our study of logic we understand that any claim of the form (p & -p) is a contradiction and is always false. Hence, a contradiction, once it is consciously understood as such, cannot be believed, because one cannot believe what one knows to be false, and contradictions are always false. We also know that if we are going to be rational we must accept whatever claims follow from any belief. So if I believe p, and p entails q, then I must also believe q. But if my belief p entails a contradiction (q & -q), which must be false, then p is false. (This is part of our Rejection Principle and is formally shown by Modus Tollens). So, if endorsing some maxim or general principle of behavior leads us to a position where we must endorse contradictory claims, both p and -p, the principle must be rejected--it cannot be willed as a universal law.

Now, given that we cannot will contradictions, imagine for example, that you are considering whether it is ethically permissible to lie to some person in order to achieve some self-serving goal or pleasure. The general maxim describing your behavior is something like "In order to satisfy one's desires, all persons may lie." On the other hand, you realize that if this were a general action-guiding principle, you would not be able to satisfy your desires by lying. This is because, in order for lying to be effective behavior, the persons to whom you lie must trust you. Yet if lying is a general practice, no one would trust anyone else. So, on one hand you must endorse the principle that no one lies (p) and, on the other hand, the maxim describing your behavior is that persons lie whenever it will serve their ends--the denial of p. So, the person who thinks it may be possible to will that lying becomes a universal law of behavior is in the position of endorsing contradictory propositions (p & -p), and, as we have seen, one cannot assent to contradictory propositions because one cannot assent to what is known to be false, and all contradictions are false. So, it seems that not all behaviors can be willed as universal laws of nature.

Our study of values and the nature of induction has provided us with yet another way of understanding the phrase, "cannot be willed." From our understanding of necessary conditions, we know that if p is a necessary condition for q, then if p is absent, q will also be absent. We can also say that if q is present, then whatever conditions are necessary for q must also exist. When we employed this way of understanding to our analysis of values, we said that if something, q, is valuable, and something else, p, is a necessary condition for q, then p is also valuable. So, if one endorses q (some end), then one must also endorse p, the means necessary for q. Now, this same line of reasoning can be applied to ethics in order to allow us to understand why some principles "can not be willed."

If someone were considering whether it was ethical to commit some sort of act, that person should consider if that kind of action could be made into a universal law or common practice without destroying the conditions necessary for the action. If making the act a universal social practice destroyed certain conditions that were necessary for the successful completion of that sort of act, then the person could not will that sort of action to be a universal social practice. To will that the action become common social practice would make the attainment of the goal of the action impossible, by virtue of destroying its necessary conditions. It would be analogous to willing that one become a medical doctor while at the same time willing not to enroll in the science classes necessary for medical research.

Again, let us apply this logic to the example of the person who is considering the ethics of lying. We see that a necessary condition for successful lying is a general framework of truthfulness. We see that if everyone lied, this framework of truthfulness would be destroyed, and the practice of lying could not be effective. People can only succeed in their lies if they are first trusted. If lying is a general practice, no one would trust anyone else.

The third way of understanding that some behaviors "cannot be willed" is based on the human condition and human nature. If some behaviors are turned into universal laws, the result would be counter to our human inclinations. First, we should remember that the purpose of ethical systems was very practical, that is, to enhance the odds of individuals attaining happiness within a social setting. If certain behaviors, such a lying and selfishness, were made into universal laws we can see how they would have the effect of undermining our attempts to achieve happiness. For example, as humans we are dependent beings who always need the help of others. Our happiness depends upon the support and good will of others. Imagine then the person who wants to say that "No one should help others." The problem is that to universalize selfishness would make it impossible for us, should we need help, to attain it. We should ask ourselves, would this principle be the sort that free rational beings would adopt? (When people argue for the virtue of selfishness, it is usually those who think they are so well off, they will not need the help of others.)

At this point, some might say that in reality it is impossible to help all people, so why should we argue for an ethical principle which commands us to help others? Isn't that to command us to do something we can not possibly do? First, we should see ethical principles as prescriptive, that is, as providing ideal standards that we should try to live up to. The duty to help others may be a duty to help those in need who we can help, not a duty to help everyone. Second, if the creation of happiness is the goal of any system of ethical principles and if we can not help everyone, it seems reasonable to say we should help first those who are most unhappy--the poor, the sick, and the oppressed. So, it seems that while we cannot help everyone, we have a greater duty to help those persons in need than we do to simply help our friends and neighbors. Such thinking clearly shows the reasonableness of the ethical principles of Christianity and other religions with their concern for the poor, the sick, and the oppressed.

Testing the ethics of a behavior by trying to universalize the maxim that describes the action is not the only approach to ethical principles. Another approach, also employed by Immanuel Kant, is to begin with the notion that ethical integrity is itself the highest human good. "Nothing can possible be conceived in the world, or even out of it, which can be called good without qualification, except a Good Will."[10] This is because, if one imagines any other human good--wealth, intelligence, health, or even happiness--if the particular human good is not accompanied by a concern for ethical principles and doing one's duty, these goods can be misused. For example, the persons blessed with intelligence can use their wisdom for evil purposes unless they are guided by ethical values. The true dignity and worth of human beings resides in their ability to know and do their ethical duty. Without these abilities, all other human goods can become evil. If this is the ultimate good, then those conditions necessary for such virtuous behaviors must also be good. Two such conditions are rational understanding and the freedom to act on that understanding. If one does not rationally understand a situation, then one can not freely decide what one's duty is and then do it. Hence, to undermine freedom and rationality is to destroy what is ultimately of greatest value in human beings--ethical integrity. Now, if freedom and rationality are of great importance, then whatever forces tend to undermine either should be opposed on ethical grounds--prudentiality is not a concern. Such forces might include poverty, illiteracy, and political oppression. Second, because ethical integrity--the willingness to discover and do one's duty--is the supreme value and each human has that potential, each human has value. To use Kant's language, "Rational nature, whether in yourself or others, can never be used as a mere means to our ends." We must respect the freedom and rationality of all rational beings.

It should by now be obvious that the nature and foundation or ethical values need not be shrouded in subjective taste or mystery. Once we understand the nature and purpose of ethical systems we see that certain values must be endorsed--that not everything or principle can be willed as being an ethical values, any more than just any figure can be a triangle. Certain conditions must be satisfied before a principle can be called ethical. These include universalizability, respect for the freedom and rationality of all persons, and a general concern for practices that aid human flourishing.

There is of course much more that can be said about ethical values and the problems surrounding both the derivation and application of the principles. To go deeper would take us beyond the scope of this appendix. We must be satisfied to see that it is possible to reason carefully about ethical issues. It is important to see that ethical judgment is objective judgment based on principles which can be derived with a good deal of rigor. The disagreements over ethical issues tend to be disagreements over whether or not a particular act or policy is an instance of a general principle, not debates over the principles. Additional problems arise when a particular issue involves an ethical dilemma where to pursue any course of action means that some ethical principle must be broken. Imagine, for example, that you have seen that lying is wrong and that you have a duty to help others. Imagine further that a group of local thugs are pursuing an acquaintance of yours and they ask you if you know where she is. What do you do? Which principle, truth telling or duty to others takes precedence?

A.6 Intellectual Obligations

A final area of values that is important for critical thinkers is that of our intellectual obligations or what has been called the "the ethics of beliefs." Since the 19th century, there has been much controversy over over the nature and extent of our intellectual obligations.[11] What are our obligations as rational beings? Can we be held morally accountable for how we form our beliefs and how we exercise our rational capacities? While most people agree that we can be held ethically accountable for our actions, it is not so obvious that we can be judged for how we live our intellectual lives.

From our study of ethical values we know that some actions would be deemed unacceptable because if universalized they would involve the agent in a contradiction, or they would undermine the social fabric to such a degree that citizens could not fulfill their desires. Can we apply this thinking to how we live our intellectual lives?

Let's imagine persons who have beliefs with which they are very comfortable. Let's also imagine that they have not acquired these beliefs after long and thorough investigation, but rather they believe what they believe because that is what they have been told by their parents, their peers, their teachers, and those persons who control the media. In other words, they are living blissfully in Plato's cave. Are these people behaving responsibly when they fail to question or seek out evidence that might disprove their beliefs? Are they shirking their duties as rational human beings for not thinking critically?

One argument that has been given for the position that there is a moral obligation to check out our beliefs is that if we choose to live a life where we unquestioningly accept our beliefs, we set a bad example for others.[12] If all people led intellectual lives of unquestioning obedience to authority or the status quo, culture would not have progressed. The heroes of our tradition have been just those persons who were willing to break with the tradition by questioning the reasonableness of beliefs common to their time: Socrates, Buddha, Jesus, Copernicus, Galileo, Newton, Jefferson, Lincoln, Einstein, Gandhi, and Martin Luther King. Religious reforms, scientific advancement, political reforms, and the breakthroughs in medicine were all a function of individuals actively questioning the status quo and the beliefs accepted by the majority of the citizens. Politically, unless thinkers had been willing to question the beliefs that perpetuated the notion that human rights were a function of social class, the very notion of universal human rights would never have been adopted.

While the value of questioning the status quo and actively investigating the foundations of our beliefs is supported by such thinking, there is a counter argument that we have a right to believe whatever we want, at least in those areas where evidence is lacking and probably not forthcoming. We should not be judged harshly for our willingness to believe many things that help us to cope with or make sense of the world and our lives, even though evidence is lacking.

Which side of the debate we accept will have a major bearing on how we conduct conduct our lives. One side says believe only where there is adequate evidence. The other side says, where evidence is lacking, you may believe if it makes life better for you. There is no easy answer to the debate. Yet that does not make the issue any less important. If we accept the premise that how we behave does affect others by the example we set, the question is what mode of behavior sets the best example?

A.7 Conclusion

We have seen that it is indeed possible to think critically about values, and that not all values are matters of individual taste. Values can be divided into ends and means. Once we have decided upon the end, then those means necessary for the end must be given value. We have also seen that it is possible to evaluate behavior from an ethical perspective. We saw that understanding ethical principles is fairly simple, but only half the battle. The difficult task is determining when the principles apply to specific instances and how to deal with ethical dilemmas where principles compete. Finally, we raised the issue of our intellectual obligations. Do we have an obligation to think critically about all areas of life or are there areas where being unreflective believers is appropriate? From an ethical point of view, the question is what sort of life sets the best example? What model of human behavior is most beneficial to society and the human quest for a meaningful life?

Exercise

Discussion Questions.

1. When we choose to live in a society, what general rules of behavior should we endorse in order for the society to provide the best environment for human fulfillment?

2. Write a short letter responding to the person who claims that ethical values are subjective or at best relative to each culture.

3. Employ the test of trying to universalize a behavior to show why certain behaviors are unethical.

4. We call many things 'good.' What are the qualities which make good schools, good clothes, good friends, and good governments?

5. Describe an ethical dilemma and then tell how you would go about deciding what to do.

6. What do you consider the greatest obstacles to acting morally?

Notes

[1] Much of what follows is worked out in greater detail in Book One of Aristotle's Nicomachean Ethics.

[2] This distinction between the life of pleasure, honor, and virtue comes from Plato's Republic, Book Nine.

[3] Aristotle, Nicomachean Ethics, Book One

[4] See Aristotle, Nicomachean Ethics, Book Two, and John Stuart Mill, Utilitarianism, Chapter Two, "What is Utilitarianism?"

[5] Plato, Republic, Book Nine.

[6] Mill, Utilitarianism, Book Two.

[7] W.K. Clifford, "The Ethics of Belief."

[8] For a more detailed analysis of the following approach to ethical principles see Immanuel Kant, Foundations of the Metaphysics of Morals.

[9] Immanuel Kant, Foundations of the Metaphysics of Morals.

[10] Kant, The Foundations of the Metaphysics of Morals, Preface.

[11] See for example the writings of W.K. Clifford, William James, T. H. Huxley, and Charles Sanders Peirce.

[12] W.K. Clifford, "The Ethics of Belief."

Predicate Logic

A.1 Symbolizing Sentences

So far, the methods we have used for symbolizing arguments allow us to discriminate between valid and invalid arguments in those cases where validity depends upon how chains of sentences are combined by truth-functional connectives. In other words, we have been studying sentence logic. There are, however, other types of arguments whose validity does not depend upon the relationship between the sentences, but rather upon the internal relationship or logical structure of the sentences themselves.

Consider the following valid argument:

1. All persons are mortal.
2. Socrates is a person.
3. Thus, Socrates is mortal.

If we were to symbolize this argument using the methods of sentence logic, our formula would look something like this:

(PM & SP) -> SM

Obviously such a symbolization is not a valid argument form. (In the instance in which PM is true, SP is true and SM is false, the conditional is false.) Given this limitation, we need an additional set of logical tools that allows us to symbolize such obviously valid arguments and to show *why* they are valid. Because the validity of such arguments turn on the subject/predicate relations within the sentences, we must develop a way of symbolizing sentences so that the internal structure of the sentence can be shown.

Let us begin by looking at the grammatical structure of simple declarative sentences. In our example, "Socrates is a person," there is a subject place (filled by the name "Socrates") and a predicate place (filled by the property "is a person"). That is the form of all declarative sentences: some property or relation is being predicated of a subject. In logical terms, the sentence "Socrates is a person" is predicating the general *property* (that of being human) of a subject or individual (Socrates). It is claiming that the subject (Socrates) is belongs to that class of things having the property of "being persons." By distinguishing between individual things, such as "Socrates," and the properties which are asserted or denied of such individuals, such as "being human," we can adopt a method for symbolizing the sentences to show the internal relation between individual subjects and the general properties ascribed to them. Here are two simple rules:

Rule #1. We will let the capital letters A, B, C, ... W stand for property terms.

Rule #2. We will let the small letters a, b, c, ... w stand for the individual subject terms.

(There are special functions reserved for X, Y, and Z and for x, y, and z.)

Hence, we could symbolize the sentence, "Socrates is human" as *Hs*; that is, *H* stands for the property term "is human," and *s* stands for the individual subject term "Socrates." This could be construed as saying, "Socrates belongs to the class of things of which humanity can be predicated." In another example, if we said, "Courage is a virtue", we would be saying that "courage" belongs to the class of virtuous character traits. We would symbolize the sentence as *Vc*, where *V* stands for the predicate term "virtue" and *c* stands for the subject term "Courage."

Exercise A.1

Symbolize the following sentences using Rule #1 and Rule #2.

1. Bob is tall. Tb
2. Betty is beautiful. Bb
3. Bob is short and Sally is ugly. (Sb & Us)
4. Socrates is fat or wise. (Fs v Ws)
5. If Judy is wise, then she will study.
6. Dick can read while Jane cannot.
7. If Jim goes home, Ann will be angry.
8. If animals have hair, then they don't have feathers.
9. If Socrates is fat and smart, then Plato is thin and dull.
10. If a figure has four sides, it must be a polygon.

A.2 The Universal Quantifier

So far the method we have been using to symbolize the logical structure of individual sentences allows us to symbolize sentences that have things or individual entities as their subjects. But what about the major premise in our initial example, "All persons are mortal?" If we symbolized it as *Mp*, how could we distinguish it from the sentence, "Some persons are mortal" which would also be symbolized as *Mp*? This is the problem that Quantification Theory seeks to solve.

In common usage, the subject of the sentence indicates that of which the predicate is predicated. it also indicates the number or quantity of things which exhibit the quality or property referred to in the predicate. That is to say, the subject of a sentence is always quantified by some term that refers to number, i.e., *all*, *none*, *some*, or *one*. This may be explicit, as in the sentence "Some men are virtuous," or implicit, as in "Socrates is virtuous." In order to capture the logical form of such sentences, we need to develop a method for indicating symbolically the number of subjects to which the predicate applies. For example, we must devise a method to distinguish between the sentences, "All persons are mortal," "Some persons are mortal," "One person is mortal," and "No person is moral." Because these sentences mean very different things, they cannot all simply be symbolized *Mp*. We know that each sentence means different things because each is shown to be true or false by quite different experiences or truth conditions.

If we wish to translate universal claims (sentences predicating some property of all members of a class, such as "All persons are mortal"), we should notice that they can be transformed into conditional statements. (We have, in fact, already done this in Chapter Four.) This is helpful because we already know how to symbolize conditionals. If, for example, someone claims that "All persons are mortal," we can translate the statement into the conditional statement, "If anything is a person, then that thing is mortal." If someone says that "Triangles have three sides," we should see that universality is implied and what is being claimed is that "*If* something is a triangle, *then* it has three sides."

Once we have translated universal statements into their corresponding conditionals, the problem is how to symbolize such conditional statements in which the subject term is the same in both the antecedent ("If *something* is a triangle") and the consequent ("then *something* has three sides").

A symbolic procedure that is often used employs what is called the "universal quantifier" to capture the correct sense of such sentences. The method we will use to symbolize sentences beginning with *all* will be first to translate them into their appropriate conditional and then to employ the following rule which substitutes the variables x or y or z for the word "something."

Rule #3: Let the variable (x), (y) or (z) placed in parentheses prior to the property term stand for the phrase, "for all x," "for all y," or "for all z."

Thus, if we want to symbolize the sentence "All men are snobs," we will transform it into its appropriate conditional form ("If something is a man, then something is a snob") and symbolize it as (x) (Mx -> Sx). This symbolization states that, "For all x, (no matter what particular thing x may be--Socrates, stones, air, etc.), if x is a man, then x is a snob." We call this quantifier (x) the Universal Quantifier. It is used to assert that all entities under its scope have a certain property. (The scope is determined by the parentheses following the universal quantifier (x) (Mx....).

This quantifier is used to symbolize all universal sentences which state that all members of a class have a certain property. For example, the premise with which we began ("All persons are mortal") can be translated into the following conditional statement, "For all x, if x is a person, then x is mortal." This is then symbolized (x) (Px -> Mx). Logically speaking, this means that, if something has the property of being a person, then that something also has the property of being mortal. As a parenthetical remark, we might notice that this claim could only be falsified if we found something (an x) that was both a person and was not mortal: (Px & -Mx). As in our sentential logic, this means that the antecedent is true while the consequent is false; hence the entire conditional (Px -> Mx) is false.

This quantifier also gives us a way to symbolize negative universal claims such as "no triangles have four sides." This sentence tells us that no triangle belongs to the class of "four-sided things." Just as with universal sentences quantified by *all*, we can translate these universal negative sentences into conditional statements. "No triangles have four sides" becomes "If something is triangle, then it is not the case that it has four-sides." We can then further translate the sentence into "For all x, if x is a triangle, then it is not the case that x has four-sides." Finally, we can symbolize it thus:

(x) (Tx -> -Fx)

All universal negative sentences can be treated in this manner.

Let us now return to our original example. Will these symbolic tools be enough to show that, if all persons are mortal and Socrates is a person, then Socrates is mortal? If we symbolize the argument with our current tools, it will look like this:

1. (x) (Px -> Mx) -- For all x, if x is a person, then x is mortal.
2. Ps--Socrates is person.
3. Ms--Socrates is mortal.

While there is an obvious resemblance between this argument and *Modus Ponens*, for the purposes of formal deduction, the needed identity is not present. (Px) is not the same as (Ps), nor does (Mx) equal (Ms). Hence, we need to develop a few more tools, tools which will allow us to translate universally quantified claims into their singular counterparts.

Exercise A.2

A. Symbolize the following using the predicate calculus and the Universal quantifier, then write the sentence for which the formula stands.

1. Vinegar is acid. (x)(Vx->Ax)
2. All atoms have electrons. (x)(Ax->Ex)
3. All events have causes.
4. Good schools have foreign language programs.
5. No virtuous person sells damaged products.
6. All creatures with hearts are creatures with kidneys.
7. No good person uses other people.
8. No relativist can judge another person.
9. Those persons with less than 60 percent fail the course.
10. No intelligent person watches soap operas.

B. What sentences would you write to falsify each of the above universal claims? For example, the claim that all vinegar is acid would be falsified by "something is vinegar but is not acidic.

A.3 The Existential Quantifier

If we have a fair understanding of how to translate universal claims and of how the Universal Quantifier (x) functions. our next task is to define a quantifier that allows us to capture the sense of statements which affirm or deny some property of *some* entities or *one* entity.

Sentences which make claims about some or one entity are doing two things. They are first claiming that some thing exists and that the thing has or does not have some property. For example. to say that "Some people are good" means that some things exist which are both people and are good. To capture this sense symbolically, we will employ what is called the Existential Quantifier--(Ex).

Hence to symbolize the sentence. "Some persons are good" or "The person is good." we would write. (Ex) (Px & Gx). Translated into sentence form, this formula says that "There exists at least one thing, x, such that x is a person and x is good. If we wanted to symbolize the sentence in our initial example, "Socrates is a person," using the existential quantifier, we would write (Ex) (Sx & Px). This means that there exists at least one thing (x) such that x is Socrates and x is a person. (Notice that we did not symbolize the sentence as a conditional (Sx -> Px). As a general rule, we always turn universally quantified sentences into conditionals, and we turn all existentially quantified sentences into conjunctions. If we symbolized the sentence "Some persons are good" as (Ex) (Px -> Gx), then we could infer by *Modus Tollens* that, if something is not good (-Gx), it will not be a person, which is clearly false. Most people are not good, but they are clearly still people.

Sentences which make negative claims about a single subject can also be easily translated. For example, if we say "Socrates is not wealthy," we are saying that there exists an x such that x is Socrates and it is not the case that x is wealthy. We then translate it as (Ex) (Sx & -Wx).

Exercise A.3

Symbolize the following statements using the predicate logic. After each formula write the sentence for which the formula stands.

1. Aristotle is not infallible. (Ex) (Ax & -Ix) There is a x such that x is Aristotle and x is not infallible.

2. Reagan is the president.

3. Some Republicans are conservative.

4. Some Democrats are conservative.

5. Some Democrats are Republicans.

6. Some virtues are not popular.

7. Some young athletes are overpaid.

8. Some arguments are confusing.

9. Francis Bacon is not Shakespeare.

10. Some virtues are not popular.

A.4 Proving Validity with Quantifiers

We have seen that (x) is the universal quantifier which means, "For all X." We have also seen the (Ex) is the existential quantifier which means, "there exists an x" such that "x is..." There is also the x which occurs within the symbolization of the sentence itself. For example, when we symbolized the statement, "All persons are mortal," we translated this into the conditional statement "For all x, if *x* is a person, then *x* is mortal." We then symbolize the sentence as (x) (Px -> Mx). We need to understand more clearly the meaning of the x in the formula (Px -> Mx). A clearer understanding of this use of *x* will show us what kinds of inferences can be drawn from formulas using *x* within the scope of the quantifiers (x) or (Ex).

When we began setting up our symbolic tools, our purpose was to capture symbolically the relationship between the subject of a sentence and the predicate. In our attempt to maintain a clear distinction between subject terms and predicate terms, we said in Rule #1 that we would let capital letters (A, B, C ... W) stand for predicate terms, i.e., those general properties predicated of the subject. In Rule #2, we said that we would let small letters (a, b, c ... w) stand for individual subject terms. Hence, prior to introducing quantifiers, the sentence, "Socrates is a person," was symbolized as (Ps). The small letter (a, b, c ... w) always stands for a *determinant subject* of which some property has been predicated.

After introducing our universal and existential quantifiers, we stopped using a, b, c, d... and let x, y, or z stand for the subject terms. For example, the universal claim, "All persons are mortal," was translated into the conditional statement, "If *something* is a person, then *something* is mortal." symbolized as (x) (Px -> Mx). Just as the word "something" in the sentence is indeterminant with respect to its referent, the x is the formula (Px -> Mx), is also indeterminant as far as standing for any particular thing. On the other hand (and this is important), because its referent is indeterminant, the x in that formula could stand for anything. Because it can stand for anything, it can stand for *any particular thing*, a, b, c... w, or a', b', c' ... w', etc. Once one understands this, it is easy to see that one can then substitute any lower case variable (a, b, c ... w) for x. The reason for this is that, if a property is *true for all* x, it will be true for any *particular* instance or instantiation of x. Hence, if we know that mortality is a property truly predictable of all persons, we know that it is a property true of any instance of a person. Thus, in an universally quantified formula, we can substitute the name of any particular thing or person (a, b, c ... w) for the x because the x functions merely as a *place marker* for such particular instances.

For example, from the sentence, "All persons are mortal," which we symbolized (x) (Px -> Mx), we can infer an instance, (Ps -> Ms), in which *s* stands for some particular person, such as Sam or Socrates. Again the reasoning which justifies such a substitution is that, if the statement, "if for all x, if x is a person, then x is mortal," is true, then we know that *if* Socrates is a person, *then* Socrates is mortal. We can universalize this practice and say that any time we have any universally quantified statement, [(x) (Px -> Mx)] we can infer an instance of that statement, (Pa -> Ma). This rule is called *Universal Instantiation*. (UI) It can be symbolized as follows:

1. (x) (Px)
2. (Pa), (UI), 1

When we test the validity of arguments using quantifiers, any time we have performed UI in a proof, we can reverse the operation by using the rule *Universal Generalization* (UG). Hence, in the example where we used UI to infer (Pa -> Ma) as an instance of (x) (Px -> Mx), we can (in the same argument) reverse the step by inferring from (Pa -> Ma) that (x) (Px -> Mx) as long as Pa and Ma have been previously derived from the universally quantified statement (x) (Px -> Mx) in the argument. Otherwise such an inference is not permissable. It would be analogous to inferring that because there was a person who was mortal, all persons were mortal. The rule UG can be symbolized as follows:

1. (x) (Px) -- given
2. Pa, by UI of premise 1
3. (x) (Px) by (UG) of premise 2, given premise 1

UI is a useful rule in science, whose laws are usually stated in the universally quantified form, (x)(Px -> Mx). From the fact that every member of a class of things has a certain property, we can infer that any member of that class also has that property. (We are not committing what we call the *fallacy of division* in this instance because the universal quantifier is not operating on the class as a class apart from its members but on the class as a potentially infinite group of *individuals* having a certain property.)

Before returning to our initial problem of proving the validity of the inference that entails Socrates' mortality, we should understand two other quantification rules. One is called *Existential Instantiation* (EI). EI says that, from any existentially quantified statement of the form (Ex) (Px) or (Ex) (Px & Mx) we can infer an instance; that is, from (Ex) (Px) we can infer Pa, Pb, Pc ... Pw, or from (Ex) (Px & Mx) we can infer (Pa & Ma), (Pb & Mb), ... (Pw & Mw). The rule (EI) can be symbolized as follows:

1. (Ex) Px
   Pa (EI), by premise 1

As in the case of UI and UG, we can reverse this process such that if an *instance* of an existentially quantified statement has been inferred by EI, then by EG, we can infer the original existentially quantified statement. This rule is called *Existential Generalization*. For example:

1. (Ex) (Px) given
2. Pa EI, 1
3. Ex (Px) EG, 1, 2

(In order to deal with complicated proofs, a good logician should learn several additional rules which limit the use of UI, UG, EI, EG. These rules lie beyond the scope of this short introduction.)

Let us finally return to the problem with which we began. As you will recall, the problem was to symbolize the obviously valid argument concerning Socrates' mortality by using only *sentential calculus*. The argument was as follows:

1. All persons are mortal.
2. Socrates is a person.
3. Hence, Socrates is mortal.

With our new set of tools, Predicate Calculus and Quantification Theory, let's see if we can show why this is a valid inference. The first premise, "All persons are mortal," is a universal premise about the class of "all persons." Hence we can symbolize it as (x) (Px -> Mx). The second premise, "Socrates is a person," is a statement about one thing or person, so we will symbolize it as (Ex) (Sx & Px). The conclusion can be symbolized (Ex) (Sx & Mx). Hence our argument will look something like this:

1. (x) (Px -> Mx)
2. (Ex) (Sx & Px)
Hence (Ex) (Sx & Mx)

Given our quantification rules, let's see if we can get this awkward-looking argument into a more manageable form; that is, let's get rid of the quantifiers. After we have done that, we can use the short-cut method to see whether it is possible to assign truth-values to the variables such that the premises are true and the conclusion false.

The first premise, (x) (Px->Mx), can be changed to (Pa -> Ma) by the use of Rule UI. The second premise, (Ex) (Sx & Px), can be changed to (Sa & Pa) by the use of Rule EI. And the conclusion, (Ex) (Sx & Mx) can be changed to (Sa & Ma) by Rule EI. Now let's see if the argument, (Pa -> Ma) & (Sa & Pa) -> (Sa & Ma), is valid; that is, let us see if it is possible for the premises to be true while the conclusion is false. We should treat the Pa, Ma, and Sa the same as we would p, q, and r in our previous chapter.

T	T		F
(Pa -> Ma)	(Sa & Pa)	->	(Sa & Ma)
T (F) F	T T		T F
(3)	(1)		(2)

The argument is valid because it is impossible to ascribe truth values such that the premises are both true and the conclusion false. We begin with premise 2, (Sa & Pa), because it is a conjunction and, for any conjunction to be true, all parts conjoined must be true. Next if we know that Sa is true and we are to make the conclusion false, then Ma in the conclusion must be false. But if Pa is true and Ma is false, no matter where they are in the argument, it is impossible for the first premise (Pa -> Ma), to be a true conditional. Hence, it is impossible to assign truth values such that the premises are true while the conclusion is false. So, the argument is valid. We know that, if indeed 'all persons are mortal' and 'Socrates is a person', then he is mortal.

If we wanted to do so, we could use Rule UG and EG to change the argument back into its original quantified form, but there is not much need for that. We see by virtue of our translation and the short-cut method that it is a valid argument.

These methods can be used to check the validity of any argument.

Exercise A.4

Symbolize the following arguments and check their validity by the short-cut method.

1. All birds have feathers.
   Crocodiles do not have feathers.
   Hence, crocodiles are not birds.

2. No birds are mammals.
   Cardinals are birds.
   Hence, cardinals are not mammals.

3. Everyone who asks receives.
   Many poor have not received.
   Hence, many poor have not asked.

4. No athletes are bookworms.
   Donna is an athlete.
   Hence, Donna is not a bookworm.

5. No bookworms are athletes.
   Sally is not a bookworm.
   Hence, Sally is an athlete.

6. All persons have a right to life.
   Fetuses are persons.
   Hence, fetuses have a right to life.

7. All persons have a right to life.
   Fetuses do not have a right to life.
   Hence, fetuses are not persons.

8. Only persons have rights to life.
   Fetuses are not persons.
   Hence, fetuses do not have rights to life.

9. No good school gives academic credit for cheerleading.
   PomPon U does not give academic credit for cheerleading.
   PomPon U is a good school.

Do We Choose Who We Are?

Critical Thinking
Baker University

April 1990

In the second chapter of The Second Sex, Simone de Beauvoir's classic feminist work, she claims "It is not nature that defines woman: it is she who defines herself by dealing with her nature on her own account in her emotional life." (de Beauvoir 362) This means that there is no "feminine nature" that causes females to behave differently from males. Females become "feminine" through the choices they make rather than because of some inner "feminine nature." The origin of this claim lies in the existential philosophy developed by Jean-Paul Sartre. De Beauvoir's position is in direct opposition to the naturalistic view of human behavior found in the writings of such psychologists as Freud, Jung, Adler, and the rest of Freud's followers. While the traditional naturalistic view of women has explained feminine character traits in terms of biological differences between the sexes, I shall argue for the validity of de Beauvoir's position that women define their own nature rather than being defined by nature.

First let us look at the Freudian position with respect to women. The foundation of Freud's psychology is that "anatomy is destiny." Females behave differently from males because they are anatomically different. When explaining the psychological development of female children, Freud appeals to what he calls the "castration complex." He claims that the young girl notices the anatomical difference between the sexes and "imagines that she has been mutilated, and is pained at the thought." (de Beauvoir 364) In addition, Freud explains female behavior by appealing to a libido (the primordial sexual urge that exists in all people) as being male in essence. The feminine libido is then treated as "a complex deviation from the human libido in general." (de Beauvoir 363) Finally, Freud claims that people are guided by their unconscious that contains pre-conscious imagery and universal symbolism. All of these natural forces go together to cause both males and females to behave as they do.

Not surprisingly, de Beauvoir attacks this position. She objects to Freud on the one hand because he bases his theory on a masculine model. She asks why the male sex should be the standard for explanation? Why not see the female as the standard and males as the deviant? In addition, he does not provide an adequate account of the feminine libido. Why should we explain female sexual behavior by some mysterious entity called the "female libido"? Furthermore, she attacks Freudianism because it takes for granted the sexual origin of many social phenomena. For example, Freud just assumes that the male supremacy over women occurs because men have a penis. Why should a penis have any more status than any other physical organ? Beyond these, de Beauvoir's primary reason for rejecting Freudianism is that it assumes that human behavior is psychologically determined. Hence, humans are not free to choose. She says, "All psychoanalysts systematically reject the idea of CHOICE and the correlated concept of value, and therein lies the intrinsic weakness of the system." (de Beauvoir 368) In contrast to Freudian determinism, the first principle of de Beauvoir's existentialism is that people are nothing other than what they make themselves. (Sartre 15) Individual differences are explained by individuals finding themselves in different situations and making choices that lead them to different sorts of lives. As situations vary, so do the people. So, while people are free to choose, "choice always remains a choice in a situation." (Sartre 44) For de Beauvoir, women find themselves in a world of many possibilities from which to choose, yet strictly speaking nothing like a Freudian "female libido" determines the choice. In her words:

> I believe that she has the power to choose between the assertion of her transcendence and her alienation as object; she is not the plaything of contradictory drives; she devises solutions of diverse ranking in the ethical scale. Replacing value with authority, choice with drive, psychoanalysis offers an Ersatz, a substitute, for morality--the concept of normality. (de Beauvoir 373)

As appealing as de Beauvoir's position might be, what is the argument for its superiority? One argument focuses on the benefits of choice as opposed to the costs of determinism. If we equate determinism with being in prison since everything is decided for the prisoners while there, including when they will get out, then the idea of choice can be equated with free existence. In a free society, people have control over their lives and the decisions that they make. Having someone or something predetermining our personal destiny is analogous to imprisonment. For the sake of human dignity, people should reject Freudian determinism.

Second, if women believe that "biology is destiny," that is, that biological factors are primary in the development of women's character, then women are prevented from transcending their situation. If their character is what places them in a subservient role in relation to men, then what is cannot be other than it is, and to dream of equality with men is an illusion. From a utilitarian perspective, if women were to accept this fatalistic determinism, then society would be deprived of their potential achievements. If all is determined, why strive for individual excellence or social justice? It follows then that for social and ethical reasons, women should not accept this Freudian position. Instead, they should believe that they define their own nature, and strive to develop those behaviors that allow them to fulfill their desires.

A third reason to reject Freudianism and to accept de Beauvoir's explanation is Freud's sexual reductionism. When it comes to explaining human behavior, he assumes that sexuality is an "irreducible datum," something that controls all parts of human life. (de Beauvoir 369) If this is true, then work, war, play, and creativity all signify nothing more than activities symbolizing unfulfilled sexual desires. Sexuality, however, is a biological function. How can sexual urges account for our primordial interest in understanding the natural world which men and women both share? There are other important parts of the human personality that Freud's theory ignores such as curiosity and the desire to understand. A physicist's search for the laws of motion can hardly be understood in terms of sexual desire, nor can many other common human activities.

Critics of de Beauvoir's framework may question the seemingly unlimited power of human choice that she ascribes. Such absolute freedom to choose our nature ignores many of the social forces that influence and limit human development. Personalities seem to be shaped by these social forces. For example, consumerism or the desire for material things so dominant in the Western industrial nations is not so much a matter of choice, but of being conditioned by media, peers, and social pressure to equate well-being with material possession. The same could be said of women and their typical desires and behaviors. These are not simply a function of choice, but rather social conditioning.

De Beauvoir, however, would no doubt point out that we are either free or not free. If we are free, then it is always possible to choose our values, regardless of the situation. People could always choose not to pay attention to parents, friends, or the media. While most people are in fact influenced by these social forces, it is not necessary. If we are indeed free, we are always free to say "no."

Second, critics could argue that while de Beauvoir believes that when women realize they can choose their own characters, they will change their behaviors, there is no reason to assume they will make such choices. It may turn out that women will adopt de Beauvoir's position, yet choose to live much the same sorts of lives they have always lived.

This is possible, but it is hardly a criticism of de Beauvoir's position and her critique of naturalism. Whether we believe in free will or determinism, our lives may end in unhappiness. The difference is that if we believe that our destiny is controlled by external or internal forces, and life turns out badly, the blame will probably be placed on something besides ourselves. If our fate is seen as a function of outside forces, we will not be inclined to strive to change the circumstances that cause our unhappiness. If we believe in free will, we will be more inclined to attempt to change those forces or circumstances that bring unhappiness.

We have seen that through adopting the philosophy of freedom, as opposed to Freudian determinism, women will be more inclined to transcend their situation and become what they choose. After an overview of Freud's theory of feminine psychology and de Beauvoir's critique, it should be clear that women need not feel helpless. They are able to change their lives and their situations. No longer do they need to assume the "natural position" in which they have been placed for thousands of years. All persons are able to choose what they will become and struggle to become what they will.

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Cover Sheet

Project Title: "Critical Thinking and the Liberal Arts"

Granted Organization: Baker University
Baldwin City, KS 66006

Grant Numbers: P 116B 80985-88
P 116B 91238

Project Dates: 08/01/88 -- 07/31/89
08/01/89 -- 07/31/90

Number of Months: 24

Project Director: Donald Hatcher
Department of Philosophy and Religion
Baker University
Baldwin City, KS 66006

FIPSE Program Officer(s): David Arnold
Ed Golden

Grant Award:	Year 1	$ 68,500
	Year 2	$106,110
		$174,610

CS214002

Project Summary

In order to address student deficiencies in reasoning and writing, a group of Baker faculty were given released time for two years to work on a one-semester course to integrate instruction in reasoning skills (critical thinking) with the study of primary texts often taught in the humanities. Upon the suggestion of one of our consultants, we decided to alter the project to a two-semester sequence that would integrate instruction in reasoning skills with written composition, while using classic texts as our readings. The new sequence began this fall with ten sections for entering freshmen and two for transfer students. The first semester focuses on instruction in critical reading and reasoning skills, and the application of these skills to paper writing. The second semester asks students to employ these skills as they study primary texts from a variety of fields and write position papers. Formal assessment consists of pre and post testing with the Test of Standard Written English and the Ennis-Weir Critical Thinking Test. Attitudinal surveys concerning the nature of general education will be given to all students when they are seniors and compared with baseline data gathered this year.

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Executive Summary
Critical Thinking and the Liberal Arts

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Baldwin City, Kansas 66006
Donald Hatcher, Project Director
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A. Project Overview: The initial project, begun in August of 1988, was to design a one-semester course required of all sophomores. The course would provide instruction in reasoning skills along with the study of primary texts often taught in the humanities.

The project began with four of the faculty attending the Sonoma State Conference on critical thinking. While there, besides attending workshops and papers on critical thinking, we contacted two of our three initial consultants for the project. Beyond this, the purpose of attending the conference was to allow staff who were not familiar with critical thinking to submerge themselves in the disciplinary and theoretical debates.

At the end of August, the staff began meeting twice weekly to plan the new course. We decided to begin by reading a book written by one of our consultants, Harvey Siegel's Educating Reason. We believed that discussion of the theoretical issues concerning reasoning and its application to various disciplines was essential before we could hope to agree on how the course should be developed. This was a wise choice because it allowed people time to discuss openly fundamental disagreements that could otherwise could have been masked when discussing more specific questions concerning the design of the course. The scope of reason's applicability to solving human problems is one such issue.

Upon the suggestion of our consultant, Harvey Siegel, we soon decided to change our course into a two-semester sequence integrating instruction in written composition and critical thinking with the study of carefully chosen primary texts. "Why," he asked, "should writing be taught apart from or prior to critical thinking?" We all agreed that we were interested in teaching students three things: reading for understanding, critical reasoning for evaluation, and the clear articulation of the ideas the are the fruits of such analyses. By the middle of October we were working on a course schema that would achieve this end -- and praying for another FIPSE Grant.

According to our original proposal, we were slated to offer two trial sections of the original one-semester course by February of 1989. From the middle of November on, much time was spent preparing materials for these trial sections. We knew all along that this would not be a course like "the finished product," even though the reading materials and exercises would overlap. By working through the Christmas break, we created a course, with exercises, and readings. By February, the course materials were ready, the courses offered, and we all learned a lot about what works and what doesn't in teaching students to read, write, and think critically.

In July 1989, we learned that our request for an additional FIPSE Grant to expand and finish the project had been funded. We worked for the next year designing the sequence and writing a text for the new course.

B. Purpose: The initial problem we were addressing was inadequate student preparation for a required senior capstone course, "Science, Technology, and Human Values." In their senior year, all Baker students are asked to write, present, and defend a position paper on a public policy issue related to new technologies or scientific development. Many of our seniors were bereft of skills needed to do an acceptable project, e.g., formulate an argument or evaluate critically the arguments of others. The new course sequence would address that problem.

In addition, having had some familiarity with the "critical thinking movement," and with the problems of assessing success in teaching reasoning skills, we saw our project as a way of experimenting with teaching techniques and assessment models.

C. Background and Origins: Baker University's particular problem was somewhat unique because only relatively small liberal arts colleges have such required courses for all graduating seniors. Having an undergraduate enrollment of around 850 allowed us to develop such a senior program and to have realistic expectations about putting together and staffing a required sequence in critical thinking and written composition. Such colleges tend to have faculty who are far more at ease in interdisciplinary adventures than those at larger research- oriented schools. It is also easier for the administration of small schools to commit resources to such an undertaking. It is easier to staff 10 to 12 sections of a course per semester than the hundreds required at a larger institution.

While the situation is peculiar to small schools, the problem of enhancing reasoning abilities and assessing one's efforts is ubiquitous in higher education. Hence, if we are successful in setting up and monitoring our program, much can be learned. (We are applying for a three-grant to help us continue careful assessment.)

Project Description: In our attempts to create a new sequence, the main activities involved getting clear on what it was we wanted the course to accomplish (instruction in critical thinking and writing coupled with learning to read the classic texts). Once we were clear on this, we developed our own text to achieve our goals. The process of ten faculty writing a text was a trying, but ultimately fulfilling experience. The real payoff came when three writers of critical thinking texts reviewed the text and declared it to be a good text for achieving our unique purposes. Only using it this fall has been a better experience.

Project Results: Because the full program has only just begun, it is impossible to say anything conclusive about results. Having taught the trial sections in the spring semester, we learned that some things work and others do not: First, if anyone is going to teach critical thinking it is essential that they understand logic and that this understanding is passed on to the students early in the semester. Second, writing can best be taught as a trial and error process with much student-faculty interaction in the form of conferences, drafts, and rewrites. Third, critical thinking courses should be student-centered. The texts should be discussed through the use of discussion questions, rather than lectures.

We also learned that assessing reasoning and writing skills is difficult, and grading even more so. The tests, such as the Ennis-Weir Critical Thinking Test, ask students to provide lengthy written responses. The Critical Thinking Essay Test that we used on a trial basis asks students to construct an argumentative essay. Grading such tests is very time consuming, and we did not have high reliability with the CT Essay Test.

While our initial test results were not conclusive, many of the staff have managed to give presentations at various conferences describing our project: The Critical Literacy Conference in Chicago, The National Humanities Education Conference in Kansas City, and the Sonoma Conference on Critical Thinking and Moral Critique. There seems to be great interest in what we are doing.

Summary and Conclusion: As the project director, there are a number of things worth noting. Some quite surprising. First, it is never easy to achieve agreement in a group of faculty from different disciplines. Enthusiasm at the beginning is not the same as "likemindedness." Anyone who desires to be a project director should be prepared for confrontational situations. Second, from the beginning each participant must be willing to compromise or change a position in light of new arguments. Third, because projects seldom progress on schedule, it is better in program development to plan for at least two years with ample time for theoretical discussion, trial runs, and revisions. Only through running trial semesters for three semesters were we able to determined what approaches and reading worked best.

Body of Report

A. Project Overview: Since 1979, Baker University has had a required senior seminar, "Science, Technology, and Human Values." All seniors are asked to write, present, and defend a position paper dealing with a public policy issue that involves ethical values and grows out of particular scientific or technological developments. Typical projects include nuclear waste storage, acid rain legislation, and fetal research. While we are considered a quality liberal arts college, the staff who teach the senior capstone have always bemoaned the preparation of many of our seniors. While they tend to be literate, they have trouble both constructing and evaluating arguments--two of the most needed skills in researching and writing such a position paper.

In 1983, in an attempt to address this deficiency, we revised our general education program to include instruction in "critical thinking." Faculty in the humanities were asked to revise their general education courses to emphasize instruction in the critical evaluation of texts and argumentative writing. Students were required to take four such courses from three different disciplines including history, religion, literature, political science, and philosophy.

After five years of such an approach, there was little difference in student performance. Many students were arriving at their senior year bereft of their needed skills. In 1987, we decided to apply for a FIPSE Grant to help us develop a required course that would provide instruction in critical thinking (reasoning and logic) coupled with the study of primary texts often read in the humanities. That way, no one would become a senior and not understand how to construct and evaluate arguments.

Upon receiving the grant, four of the six faculty attended the critical thinking conference at Sonoma. The purpose was to familiarize the unfamiliar with "the critical thinking movement" and to locate consultants who were especially suited for our project. Because of its size and reputation, the Sonoma conference is a gold mine of personnel and literature dealing with teaching critical thinking.

We decided to use three consultants: Harvey Siegel, author of Educating Reason and an expert in epistemology and theoretical issues; Stephen Norris, co-author with Robert Ennis of Evaluating Critical Thinking and an expert in assessing reasoning skills (and the problems thereof); and, Jerry Nosich, who specialized in integrating critical thinking into classroom assignments. our consultants were instrumental in making the progress we did.

Throughout the remainder of the year, the six staff members met twice each week to work on the new course and develop appropriate course materials. Interspersed throughout the first year were visits from our three consultants and our Program Officer, David Arnold.

Upon the advice of Harvey Siegel, we decided to expand our project to a two-semester course that would integrate critical thinking and written composition, with the study of classic texts considered to be foundational for understanding Western culture. This decision, of course, influenced our activities. For example, as we planned the trial section of the course, we planned it as if this would be only a first semester of a year long sequence.

By working through the holidays, we managed to prepare a handbook of readings, discussion questions, and other course material. In February of 1989, we offered two trial sections of the course. In the mean time, we received word that we had attained the additional FIPSE Grant.

The trial sections of the course were not well structured to achieve the purposes that we wanted to achieve. Our plan was to intersperse instruction in critical thinking with readings such as Hesiod, the Bible, Plato, and others. Prior to discussing the readings, discussion questions would be handed out, and students would be ready to discuss the ideas on the assigned day. After discussion each reading, students would then write a position paper. Prior to the actual writing of the paper, each student would meet with the instructor to discuss the paper. Such conferences, teaching such primary texts, and making students responsible for in-class discussion were all good ideas, ideas that we will continue to employ. The problem though is that without careful "up front" instruction in logic and critical thinking, our freshmen were not equipped to write the required argumentative papers. When their meager attempts were graded, they rightfully objected that they could not be expected to construct argumentative papers without instruction in argumentation. This complaint led us to write the text that we wrote during the twelve months the spring semester. It led us to the decision to spend six or seven weeks talking about logic and reasoning, prior to assigning any significant papers.

Trial sections of the new approach were offered both in the fall of 1989 and spring of 1990. These sections were models of what was to be the first semester of the freshmen sequence. According to student evaluations, this approach with careful instruction in critical thinking techniques was much more successful.

One problem, however, is that not all faculty feel comfortable teaching a bit of logic or explaining the nature of induction or controlled experimentation. While humanities faculty feel at home leading discussions over literature or other readings that are outside of their disciplines, they do not feel equally at home teaching material where there are in fact right and wrong answers, where errors in understanding are obvious. This was a bit of a problem, but through some careful faculty development, not the least of which being actively involving all of the staff in writing the text, most (but not all) feel comfortable with the material. With normal faculty turnover and sabbaticals we will need to involve new faculty in teaching the course. These will likewise need to be given instruction. (We are applying for yet another FIPSE Grant to carry out a series of summer seminars for this purpose.)

While we were offering trial sections of the first course in the new sequence, we also offered a section of written composition that modelled what we envisioned doing in the second semester of the sequence. Using the Test of Standard Written English (TSWE) as our assessment tool, we wanted to see if teaching composition through having students read primary texts and write position papers would teach them the fundamentals of English grammar and composition as well as other more traditional approaches. To our pleasant surprise, students in the trial section scored even higher on the TSWE than those in five other sections that were modelled on more traditional approaches. This experiment helped overcome the skepticism of some of our English department faculty.

Throughout the summer of 1990, some of the project faculty worked on revising our text. In the fall, we offered ten sections of the course to freshmen and two special sections for transfer students.

At this time, all seems to be going well. We are looking to the second semester which will consist of students reading and discussing texts from a variety of disciplines and writing position papers in response to the texts. The course will be student-centered and use discussion questions to guide textual examination and inquiry. We will also use student faculty conferences as a way of improving writing skills. (A copy of the first semester text and course descriptions accompany this report.)

B. Purpose: The "Critical Thinking and the Liberal Arts" project aimed at enhancing students' reasoning and writing skills and to introduce them to some of the classic texts of the Western tradition. We have succeeded in putting together a two-semester course that included instruction in all three elements.

The instruction in reasoning skills was done through the study of our text, Reasoning and Writing: An Introduction to Critical Thinking. Student writing is enhanced through having students write a series of seven critical papers in response to readings from primary sources. One tactic that seemed to help students become more self-conscious of the writing process was to ask them to meet with the faculty with an introduction and outline to their papers prior to writing a draft. Such conferences were very helpful in getting students to think carefully about a position prior to writing.

The most successful part of the trial sections of the course was the discussion of the texts. Students were assigned particular discussion questions for the reading each day. Long lists of the questions were created by the staff, and each faculty chose which to use in the section. The students responded to this challenge very positively. Students like to be active participants in a class. What was enigmatic was how some students seemed able to handle discussion questions in a sophisticated manner, while not being able to write strong papers over the issues. Perhaps talk is cheap, and not as closely related to writing as one might believe. As previously mentioned, students claimed the staff had not given them sufficient instruction in argumentative paper writing prior to assigning the papers. This issue being addressed in the design of the new course. We are spending seven weeks studying the relationship between reasoning, reading, and writing. After that, papers over texts will be assigned.

Given the text's format of simple explanation and exercises in reasoning and writing, coupled with student-centered discussion, we see no reason why a course such as this cannot be taught by any intelligent faculty member from any discipline. This helps gain the needed administrative support because it does not mean that employing such a program entails hiring large numbers of additional logicians or composition teachers. Even so, anyone who attempts to set up such a program can count on continued staffing problems. The administration must be willing to hire additional faculty as needed or to screen new faculty to make sure they are interested in teaching in such a program or provide training for additional faculty already at the institution.

In addition, it is absolutely essential that whoever works on such project is willing to endorse and learn the methods of critical thinking and logical evaluation. There are people in academia, perhaps more today than ever before, who are critical of rationality and feel uneasy with logic, e.g., the current president of the Modern Language Association has recently expressed such misgivings in an interview with Lynn Cheney, Director of the NEH. Such people, while we can respect their ideas and invite them to debate their positions--by what rules we are not sure--will make the success of a project such as ours difficult. Once a person has denounced the value of rationality and critical thinking, it is literally impossible to convince them by means of argument that they should be interested in teaching reasoning to all students.

C. Background and Origins: As pointed in the Project Overview, our project grew out of problems with student preparation for Baker University's senior capstone, "Science, Technology, and Human Values." Students were not adequately prepared to write a lengthy argumentative paper. They were lacking in the requisite reasoning skills. This, we rightly believed, was because they did not have an adequate understanding of reasoning (logic), let alone how logic could be applied to writing.

Having tried courses where "critical thinking" is taught across the curriculum, we decided to develop a required course in critical thinking. It seems now that if any "across the curriculum" approach to teaching reasoning is going to be successful, all staff must share a common understanding and appreciation of critical thinking and its application to writing. This could only be gained by formal instruction to all students for at least a year or so. Likewise, the success of our approach seems to depend on such instruction.

Having a course required of all students seems to be the most cogent way to ensure that all students possess the skills and dispositions for which we aim. This, however, may only work in either large research institutions where graduate students could teach the myriad of sections needed or in smaller liberal arts colleges where the number of sections required is relatively small.

On the other hand, if faculty believe that institutions should support the needed sections of written composition, then they should also be willing to support sections of critical thinking. This is because thinking well seems a necessary condition for writing well.

D. Project Description: In order to develop the course, the six faculty met twice weekly throughout the 88-89 academic year. In the meetings we began by discussing theoretical underpinnings of critical thinking. To this end we worked carefully through Harvey Siegel's new book Educating Reason. The rationale for this was that unless we could agree upon the nature and scope of critical thinking, we could hardly hope to agree on a means of teaching it.

In September of 1988, Siegel made a three-day visit as one of our consultants. The staff had composed a list of questions over his book which were mailed to Siegel prior to his visit. It was during his visit that he suggested that teaching students how to think should go hand in hand with teaching students how to write. The following day the staff decided to alter our project to a two-semester sequence integrating instruction in reasoning and writing with the study of primary texts that were foundational to Western culture. As a result, nearly twice as many faculty were needed to teach the multi-sectioned courses.

Under the 88-89 Grant, we were obligated to offer two trial sections of the new course in the spring of 1989. Soon after Siegel's visit we began to discuss what these trial sections should be like. We concluded the obvious: Students should read such texts as the Bible, Platonic dialogues, Lucretius, and Epictetus. They should be instructed in how to evaluate the positions, and they should do a good deal of writing. We also began working with Steve Norris, our consultant on assessment, in order to develop adequate assessment procedures. Norris, as well as others in the academic community, were quite excited that we were actually developing a program to enhance reasoning skills and attempting to assess our outcomes. It seems that many were trying to enhance student critical thinking skills, but no one was bothering with assessing the results of such efforts.

Because we were interested in teaching students to read and write critically, we chose assessment instruments that emphasized just those skills: the Ennis-Weir Critical Thinking Test and a Critical Thinking Essay Exam. These will be described in detail in the next section.

Towards the end of the semester our third consultant Jerry Nosich visited and gave a series of workshops on how critical thinking skills could be applied to the study of classic texts. He emphasized that students must be forced to get clear on what the text says prior to any evaluation of the arguments on the position that is taken by its author. Hence, in our new course a good deal of time is spent having students paraphrase passages and identify arguments.

As with any interdisciplinary course the selection of readings is never easy. One must always be prepared to compromise. We ended up, after much discussion and debate, using texts from Plato, Bacon, Madison, Aquinas, and Russell in the first semester course. The second semester readings will include material from the Bible, Hesiod, Lucretius, Buddha, Epictetus, Marx, Adam Smith, Freud, Jung, J.S. Mill, and other writers from a variety of discipline. The reading will change each semester to prevent plagiarism from becoming a problem. The important thing is to use classic texts that provide different views on important questions. The students will be forced to judge which view is most reasonable and defend their judgment in their papers.

In February we began the trial sections. We gave pre-tests to both sections and to a control group. As I have already indicated, teaching these trial sections was a valuable learning experience and prepared us to plan for reasonable changes in our approach. The main things we learned were that students like the discussion format; they were also genuinely pleased with teacher-student interaction in the paper-writing process. They were also enthusiastic over the study and discussion of the classic texts. One student said it was the first "real college course" she had had. Another said he wished he could take it over. We also learned that much clearer instruction was needed in reasoning and writing. We focused too much on textual analysis and discussion, and not on reasoning skills per se.

At the end of the semester we gave post-tests to all the students in the course, as well as to a control group, and began thinking about the revisions that would be necessary for the Fall 1989 section. We were all thankful that we were going to offer a two-semester course. If reasoning and writing is to be significantly enhanced, it takes more than a one-semester course.

Additional trial sections were run both semesters of the following year, using versions of the text we decided to work on. Students seemed to like this approach much better.

A windfall for our project occurred in the summer of 1990 when we received a FIPSE funded grant through Phillips University to run a summer seminar for some of our faculty to study the course materials we were going to use this fall. This seminar was very successful. We are hoping to be able to run similar seminars for the next two summers so that nearly all Baker faculty will be familiar with what we are teaching in our freshman sequence. It is great fun to study classic texts with people from a variety of disciplines.

As part of this grant and the Phillips University grant, we were able to bring in three textbook authors in the critical thinking movement to review our materials and to give workshops to the project staff and the Baker faculty involved in the summer seminar. These consultants included Ralph Johnson, author of Logical Self-Defense, Ed Damer, author of Attacking Faulty Reasoning, and Connie Missimer, author of Thinking Critically. Their presentations were helpful to all, but the best thing they did was to each review our text. We then spent the rest of the summer revising it in an attempt to respond to the criticisms they offered. Each made helpful suggestions, and each expressed envy that their schools did not have a program such as the one we were creating. But, such programs take faculty and administrative support that is lacking in most schools. We are lucky.

E. Project Results: Given that the project is a two-semester sequence and that we have yet to complete the first semester of the "Real Thing," at this time it is difficult to draw any final conclusions.

The best thing is that we have accomplished what we set out to do. We have a two-semester required sequence for all freshmen that provides overt instruction in critical thinking, reasoning, and writing, combined with the study of primary texts. Last spring, the Baker faculty voted to accept the courses and to make them a part of our general education requirements. Secondly, according to our consultants, we have put together a good textbook designed to achieve our stated purposes. (Whether anyone else will be interested in adopting our approach, and hence the text, remains to be seen.) Third, we have in place nationally accepted tests aimed at assessing the courses to see if we have indeed improved students' reasoning and writing abilities; i.e., the Ennis-Weir Critical Thinking Test and the Test of Standard Written English.

After grading the Ennis-Weir and the Critical Thinking Essay tests from the trial sections, some conclusions can be drawn.

First, after a little practice our project staff were able to grade the Ennis-Weir tests with a correlation of .90. That's terrific. Secondly, this passed summer, we were able to train student workers to grade the essays and they had a correlation of .85. So, in the future, we will try to use student help for this time consuming process.

Unfortunately, for the trial sections of the course, there were few significant increases in student scores on the Ennis-Weir Critical Thinking Test. What this tells may indicate is that there may be a problem with motivating students to do well on the post tests. This is because no part of their grade depended upon doing well on either test. This year we have given both pre-tests to all freshmen and transfer students. At the end of the year we will give post-tests as part of their final exam. While they will not fail the course if they do poorly, their grades will be affected. This should make them take the exams seriously.

For the purpose of gaining reliable data, such exams must be graded blind without knowing whether the exam is a pre or a post-test or who's class it was. So the grading for purposes of assessment and dissemination must wait until the end of the semester. This year's staff did not finish until in July--long after course grades were turned in.

As most people who are concerned with teaching reasoning skills know, assessment is a terribly important yet problematic area. While the data we collected this year is in itself not particularly significant, it does provide us with a base by which we can evaluate our future efforts. We plan to continue administering these same tests over the years. If we can get some additional funding, we will work on developing testing materials that are somewhat easier to grade. (As of now, however, all of our consultants agree that for the purposes of testing reading, thinking, and writing skill, the Ennis-Weir Critical Thinking Essay Test is the only acceptable tool on the market.

Again, the only problem is with grading the tests. It is a time consuming and labor intensive job. I plan to request additional funds from FIPSE to pay faculty and students to do the grading during the summers.

We are in a good position for the dissemination of our project results. Having formed the Baker University Center for Critical Thinking in 1986, many of the staff are veterans at giving in-service workshops. We are known in the area and will be asked for continue such work. During last year alone, project staff members gave presentations describing our project at three national conferences: The National Humanities Education Conference in Kansas City in April, The Critical Literacy Conference in Chicago in May, and The International Conference on Critical Thinking and Moral Critique at Sonoma University in August. We also gave in-service workshops on teaching critical thinking at two regional colleges: Tabor College and Colby Community College. In addition, materials describing our project have been sent to many deans and faculty throughout the United States, Canada, and Britain, who, upon reading about the project in various critical thinking journals, wrote to ask for a description and course materials. We wish we could now send them a copy of the text, but it is nearly 300 pages long and costs us a lot to produce.

Further efforts for dissemination include plans to involve additional faculty (both from Baker and other institutions) in summer workshops to study the course materials: both the text and the readings from classic texts. We believe that it is important for all of our faculty to know what is being required of all freshmen. If we are funded in our current FIPSE grant request we will run such workshops for the next two summers. It has also been suggested that we invite a few area high-school humanities teachers to join the seminars. We believe that our job as professors would be made much easier if more high school teachers took seriously the teaching of reasoning and writing and were also familiar with the sorts of texts typically taught in liberal arts colleges such as ours.

Summary and Conclusion: In conclusion, thanks to the released time provided by the grants, we have created a new two-semester sequence that integrates instruction in critical thinking and written composition with the study of classic texts. We have also created a critical thinking text, Reasoning and Writing, that is unique and seems adequate for our purposes. For ten faculty from different disciplines to complete such a text was itself a great experiment in critical thinking. We each had to learn to live by the rules of critical thinking as each person's work was criticized by other members of the group. It was a very beneficial experience for us all. Faculty, like students, learn best when they are actively engaged in critical thinking about real issues and problems, rather than passively discussing or, worse yet, listening to a presentation. Working on such a text that had to be completed by August of 1990 was active engagement at its highest.

One problem with the project was time. It would have been better to have a three-year grant that allowed more planning time before we had to offer the trial sections. Some members of the staff did not yet have a clear enough understanding of the nature of critical thinking and the role the logic plays in both evaluating and constructing arguments.

Another suggestion that I would make for such interdisciplinary projects that involve critical thinking is to include equal numbers of faculty from the humanities, sciences, social sciences, and other departments. Critical thinking involves skills that transcend all disciplines, and it is a mistake to build a program with only input from people trained in the humanities. For example, the social scientists involved in the summer seminar funded by Phillips University not only understood what we were doing, but made invaluable suggestions for clearing up our chapter on inductive logic. This would also make the program easier to sell to the entire faculty. Because we were all from the humanities, there was some skepticism when we claimed that this new course was not a humanities course, but taught skills that transcended disciplines.

I would also warn any potential project director to be ready to work harder that he or she ever imagined in an attempt to keep the project on track and moving toward its completion. Even though faculty were given both release time and stipends to prepare the needed materials, it is a constant effort to make sure deadlines are met. Ones popularity will no doubt suffer.

Now that we have finished, and things seem to be going well, I see no reason why colleges of all sorts cannot restructure their written composition sequences and provide instruction in reasoning prior to writing. The strategies we provide for constructing arguments are the same strategies one should use to construct papers.

Appendix

1. I would like to add that one reason our project was successful was because of the continued encouragement and helpful advice from David Arnold. During his visits to Baker University he provided the sort of positive reinforcement and encouragement that we all needed as we haggled over different conceptions of the program. He let us know that FIPSE thought this was a very important project, one that we could be proud of if we who were working on it did a good job.

The second person who was very helpful was Juanita Bowe. As expected, we had to make some changes in our budget line items. Juanita worked diligently to make sure I could accomplish the goals of the project and acceptably alter the budget.

2. The biggest mistake that I made was to write such a proposal for only one year. While it was impossible to write another proposal and finish the grant, all would have worked much more smoothly if I had begun with a two or three year plan. FIPSE should be very skeptical of one-year proposals that claim they will create a new educational program, run trial sections, and have it running in two-semesters.

The other mistake that I made was not to pay myself a stipend. While I had one-half reduced time throughout the project, I found myself working more hours and suffering more anguish than I ever imagined. Check the resumes of project directors carefully to make sure they show evidence of being able to deal with such responsibilities and pressures. Several times I was reminded of the proverb, "Be careful for what you wish, because you might get it."

I am certainly glad that we received the grants and have the new sequence in place. We believe that our project and our assessment techniques will be of interest to many. In looking back though, I realize that I have written very few scholarly articles in the past two years, yet prior to the grants I would publish two to three each year while teaching my courses. That indicates the amount of work directing the project requires relative to my normal academic activities.

CRITICAL READING AND WRITING (LA 101)

Course Description

This course is designed to teach students to read carefully, to think critically, and to write clearly and persuasively. These skills are essential for success in college. We intend to achieve these objectives through instruction and practice in critical thinking and writing skills combined with the study of primary texts. The primary method of instruction is based on student participation. Students will be responsible for preparing the assigned material and for actively participating in class discussions.

Course Objectives

1. To instruct students in the practice of reading difficult material carefully and critically.
2. To impart to students a disposition to question the reasonableness of claims, beliefs, evidence, and inferences in what they read and hear.
3. To instruct students in the fundamentals of good reasoning, including the nature of deduction, induction, and informal fallacies.
4. To instruct students in strategies for developing arguments and writing and revising expository essays.
5. To introduce students to significant primary texts.

Grading Criteria

Class preparation and participation	(10%)
Collected written exercises and essays	(20%)
Three critical papers	(30%)
Mid-term exam	(15%)
Final exam	(25%)

Academic Policies

The academic expectations for this course are consistent with those described in the Baker University Student Handbook, Section V. No work determined to be plagiarized or counterfeit, wholly or in any part, shall be acceptable. Any instance of academic misconduct shall result in failure in the course. The infraction will then be reported to the Academic Standards and Policies Committee. Current Baker policy is that any grade resulting from academic misconduct is identified as such on the student's transcript.

Attendance Policies

Attendance is required. Any student who misses more than five classes will fail the course.

Student Responsibilities

Students should maintain a portfolio of their semester's work for evaluation during the final week.

Text: Reasoning and Writing: An Introduction to Critical Thinking

LA 101 Schedule of Assignments

August	
W -- 29	Reasoning and Writing: Introduction: Why Critical Thinking?, pp. 1-20, Exercise 1.6
F -- 31	R&W, Grammar review, Rules for written work, Appendices A & B, pp. 277-295
September	
M -- 3	Labor Day
W -- 5	Reading: Plato, "Allegory of the Cave" pp. 23-30. Discussion questions, p. 21
F -- 7	Reading: "Allegory of the Cave"
M -- 10	In-class essay, "A Defense of Critical Thinking," "The Problems with Thinking Critically," or "A Critique of Critical Thinking"
W -- 12	R&W - Ch 2 - "What is CT?" Exercise 2.2
F -- 14	R&W - Ch 2 - "What is CT?" Exercises 2.3 and 2.4
M -- 17	R&W - Ch 2 - "What is CT?" Exercises 2.5 and 2.6
W -- 19	R&W - Ch 3 - "Understanding What You Read"; Identifying Emotive Language, Exercise 3.1, Summarizing, Exercise 3.2
F -- 21	R&W - Ch 3 - Summarizing, Exercise 3.2 continued
M -- 24	R&W - Ch 3 - Summarizing, Exercise 3.2
W -- 26	R&W - Ch 3 - "Opinions, Arguments, Enthymemes," Exercise 3.4
F -- 28	R&W - Ch 4 - "Evaluating Arguments," (Deduction),Exercise 4.2, 4.3
October	
M -- 1	R&W - Ch 4 - "Evaluating Arguments," (Proving Validity), Exercise 4.4
W -- 3	R&W - Ch 4 - "Translating Arguments," Exercise 4.5
F -- 5	Reading: "The Federalist Paper #10" (summarize, symbolize, and evaluate the argument)
M -- 8	R&W - Ch 5 - "Evaluating Premises," (Induction), Exercise 5.6,A
W -- 10	Reading: Francis Bacon, "The Four Idols" (summarize the major points of each paragraph)
F -- 12	Bacon
M -- 15	R&W - Ch 5 - "Analogical Arguments," Exercise 5.6,B
W -- 17	In-class critical essay #2, "The rights of animals," or other topics given in Exercise 5.6,B2
F -- 19	No Class Mid-term Break
M -- 22	R&W - Ch 6 - "Informal Fallacies," Exercise 6.1, 6.2

W -- 24	(Essay returned) Review Chapters 1-6
F -- 26	Hour exam
M -- 29	R&W - Ch 7 - "Forming a thesis," Exercise 7.2
W -- 31	R&W - Ch 7 - Supporting your thesis, Exercise 7.3
November	
F -- 2	Reading: Aquinas, "Five Proofs for the Existence of God"
M -- 5	Reading: "Five Proofs for the Existence of God"
W -- 7	Reading: Russell, "Why I Am Not a Christian"
F -- 9	Reading: "Why I Am Not a Christian"
M -- 12	Conferences to discuss outlines of papers
W -- 14	Conferences to discuss outlines of papers
F -- 16	Reading: Plato, "Apology" (PAPERS DUE)
M -- 19	Reading: "Apology"
W -- 21	THANKSGIVING
F -- 23	THANKSGIVING
M -- 26	Reading: Plato, "Crito"
W -- 28	Reading: "Crito"
F -- 30	Conferences to discuss outlines of papers
December	
M -- 3	Conferences to discuss outlines of papers
W -- 5	Review for Final (PAPERS DUE)
F -- 7	Conferences to discuss semester's work

Comprehensive Final: Time to be announced!

Ideas and Exposition
LA 102 Readings

1. Theme -- Origins

   Genesis, Chps. 1-9
   Hesiod, "Theogeny" (selections)
   Lucretius, On the Nature of Things (selections)

   Conferences
   Paper #1

2. Theme -- Human Happiness

   Buddha, "The Dhammapada" (selections)
   Epictetus, Enchiridion
   Shaw, Major Barbara

   Conferences
   Paper #2

3. Theme -- Human, Natural, and Divine Law

   Exodus, "The Ten Commandments"
   Jesus, "Sermon on the Mount"
   Aquinas, Treatise on Law

   Conferences
   Paper #3

4. Theme -- Personal Identity

   Jung, "Anima and Animus"
   Horney, "The Distrust Between the Sexes"
   de Beauvoir, The Second Sex, Chapter Three

   Conferences
   Paper #4

5. Theme -- Love and Friendship

   Plato, "Symposium"
   Ovid, The Art of Love (selection)
   Firestone, The Dialectic of Sex (selection)

   Final Paper Due